JUL 26 1961

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SOAP AND CHEMICAL SPECIALTIES

JULY 1961

"Air Maid" suds liquid detergent of Jewel Tea Co., Chicago, is now being packaged in new polyethylene plastic bottles. Pink bottle, by W. Braun Co., comes in two sizes: 22 and 32 ounces.

IN THIS ISSUE

Light Duty Liquid Detergents 43
Small Soaper Switches to Specialties 47
Hazardous Substances Labeling 71
Aluminum Aerosol Containers 78

Mild pH... only one of the reasons to use Solvay Snowflake Crystals

Its *(1) mild pH* of 9.8 in low concentrations at room temperature, is just one reason why Solvay® Snowflake® Crystals is applied in processes and products ranging from household and industrial cleansers to luxury bath preparations. It offers a combination of physical and chemical properties not found in any other form of alkali.

For example. This sesquicarbonate of soda remains *(2) free-flowing* and *(3) non-caking* after prolonged storage. It imparts these properties to dry materials mixed with it.

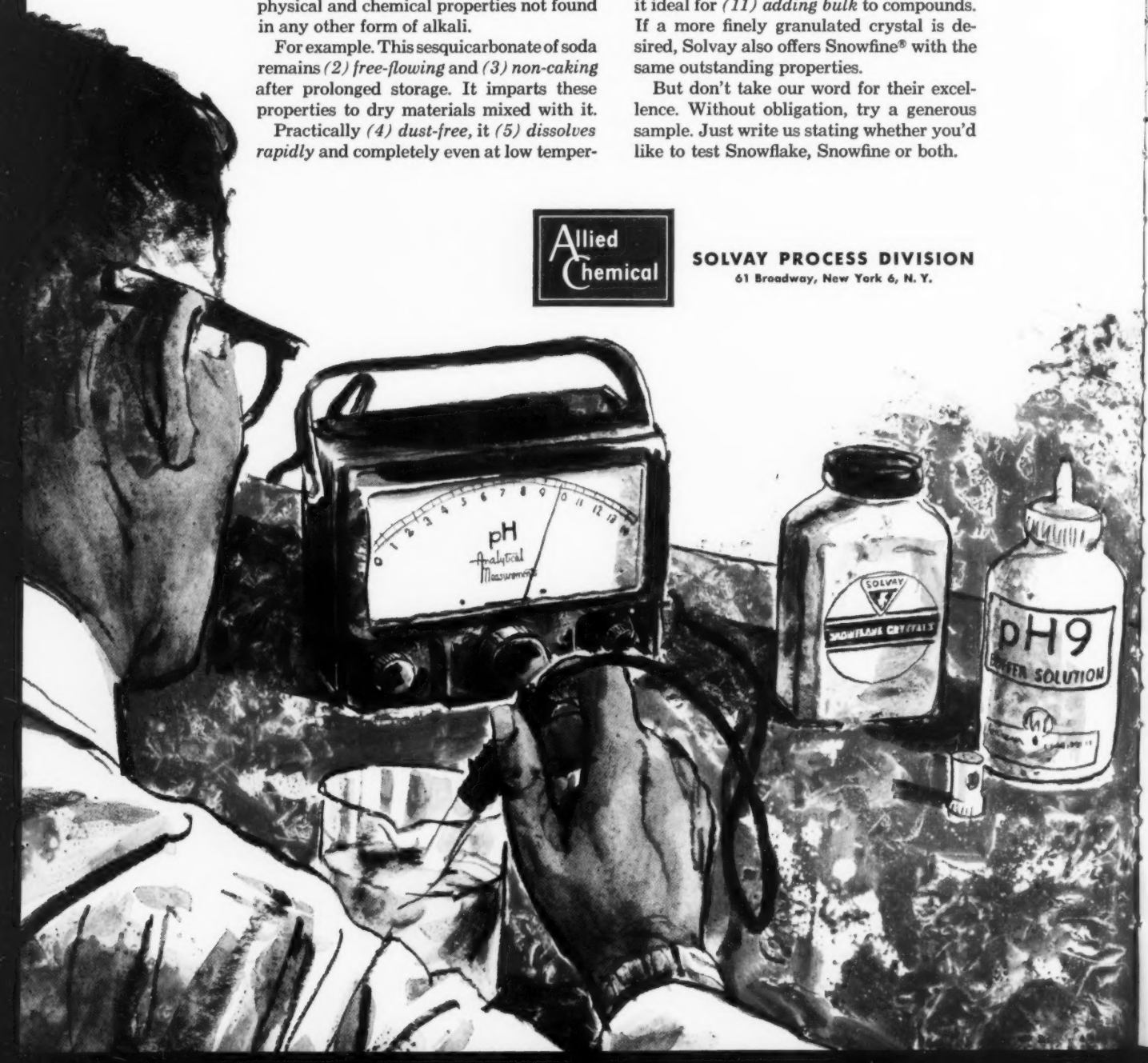
Practically *(4) dust-free,* it *(5) dissolves rapidly* and completely even at low temperatures. These uniform, *(6) sparkling-white crystals* possess desirable *(7) water-softening* and *(8) detergent* properties, and are noted for their *(9) acid neutralizing ability* and *(10) buffering action.*

The density of Snowflake Crystals makes it ideal for *(11) adding bulk* to compounds. If a more finely granulated crystal is desired, Solvay also offers Snowfine® with the same outstanding properties.

But don't take our word for their excellence. Without obligation, try a generous sample. Just write us stating whether you'd like to test Snowflake, Snowfine or both.

Allied Chemical

SOLVAY PROCESS DIVISION
61 Broadway, New York 6, N. Y.



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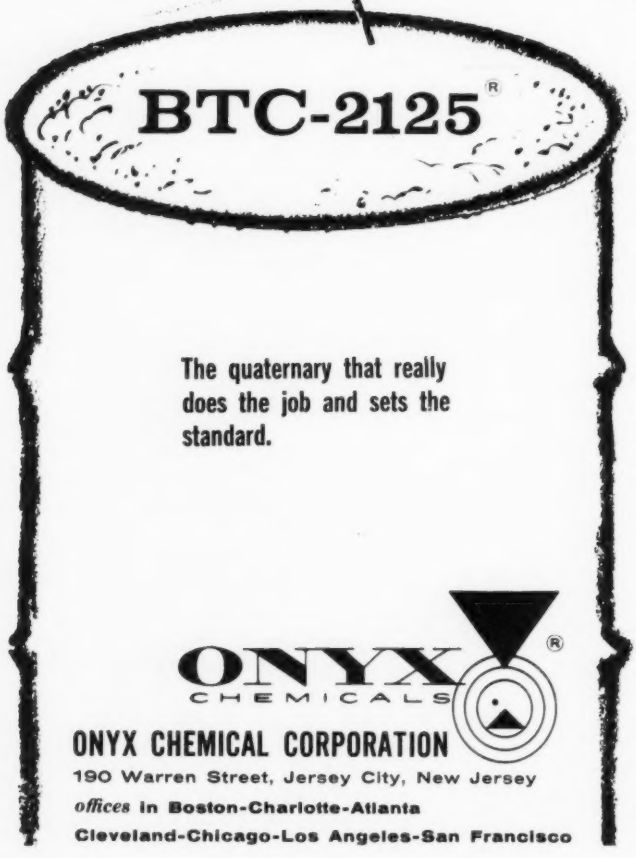

ONYX CHEMICAL CORPORATION
190 Warren Street, Jersey City, New Jersey
offices in Boston-Charlotte-Atlanta
Cleveland-Chicago-Los Angeles-San Francisco

The hidden plus is at least **750** ppm water-hardness tolerance. You can have this, at no additional cost, if your formulator is using **BTC-2125**® as the active ingredient in his sanitizer or detergent sanitizer.

Highest phenol coefficients, maximum biocidal properties mean extra safety and performance for you.

The active ingredient designation for **BTC-2125** offers you ultimate in environmental sanitation for same dollar spent.

BTC-2125 is a carefully controlled blend of two distinct quaternaries, alkyl (C_{14} 60%, C_{16} 30%, C_{12} 5%) dimethyl benzyl ammonium chlorides and alkyl* (C_{12} 50%, C_{14} 30%, C_{16} 17%, C_{18} 3%) dimethyl ethylbenzyl ammonium chlorides. When one or both of these active ingredient statements appear on the label, you are assured of the very best of quarternary germicides.

Be sure **BTC-2125** is the active ingredient statement when specifying germicides. The finest products are made with the best quarternaries. Insist that the product **you** use contains **BTC-2125** . . . the "hidden plus" in the superior germicidal products. Onyx provides the required quality, research and development that go with a company that puts fifty years of experience and leadership behind their products.

* U. S. P. 2,676,986

Vol. XXXVII, No. 7, July, 1961

Cover photo: New polyethylene bottle in two sizes has recently been adopted by Jewel Tea Co., Chicago, for its "Air Maid" private label, liquid detergent. Pink bottles, by W. Braun Co., Chicago, come in 22 and 32 ounce sizes. Brightly colored paper label, by A. M. Steigerwald Co. Blue, silk-screened back panel was processed by Glass Crafters, Inc. Graphic design by Nugent-Graham Studios. Bottles feature convenient pour-out spout.

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ABC
SINCE 1934

IN THIS ISSUE

35 AS THE EDITOR SEES IT
39 AS THE READER SEES IT
41 DETERGENTS, CLEANSERS, SOAPS
43 LIGHT DUTY LIQUID DETERGENTS, *by M. Gluckman*
47 SMALL SOAPER DIVERSIFIES; SWITCHES TO SPECIALTIES
49 ACCIDENTAL INGESTION HAZARD, *by R. Owen Carter and John F. Griffith*
53 FORCES IN DETERGENCY, PART III, *by J. C. Harris*
56 NEW ARMOUR RESEARCH LABORATORY
63 CHEMICAL SPECIALTIES
67 CONSUMER'S VIEW OF INSECTICIDE MARKETING, *by Andrew B. Meldrum*
71 HAZARDOUS SUBSTANCES LABELING, *by Dr. E. G. Klarmann*
79 ALUMINUM AEROSOL CONTAINERS, *by R. M. Howe and F. M. Languedoc*
89 EUROPEAN POLISH INDUSTRY, *by Wolfgang Sapper*
94 BRAKE FLUID AND BRAKE MAINTENANCE (CONCLUSION) *by Stanley W. Coryell and Donald H. Hanson*
103 PACKAGING
109 PLASTICS SHOW IN NEW YORK
111 PACKAGING NOTES
117 NEW PRODUCTS PICTURES
121 NEW TRADE MARKS
123 HOUSE & GARDEN AEROSOL INSECTICIDES, *by E. F. Mace*
127 PRESSURE PACKAGING
133 AEROSOL PATENTS
137 PRODUCTION
139 CONTINUOUS DETERGENT PLANT
146 SOAP PLANT OBSERVER
149 NEW PATENTS
151 PRODUCTS AND PROCESSES
153 NEWS
171 CLASSIFIED ADVERTISING
178 ADVERTISERS' INDEX
179 MEETINGS CALENDAR
180 TALE ENDS

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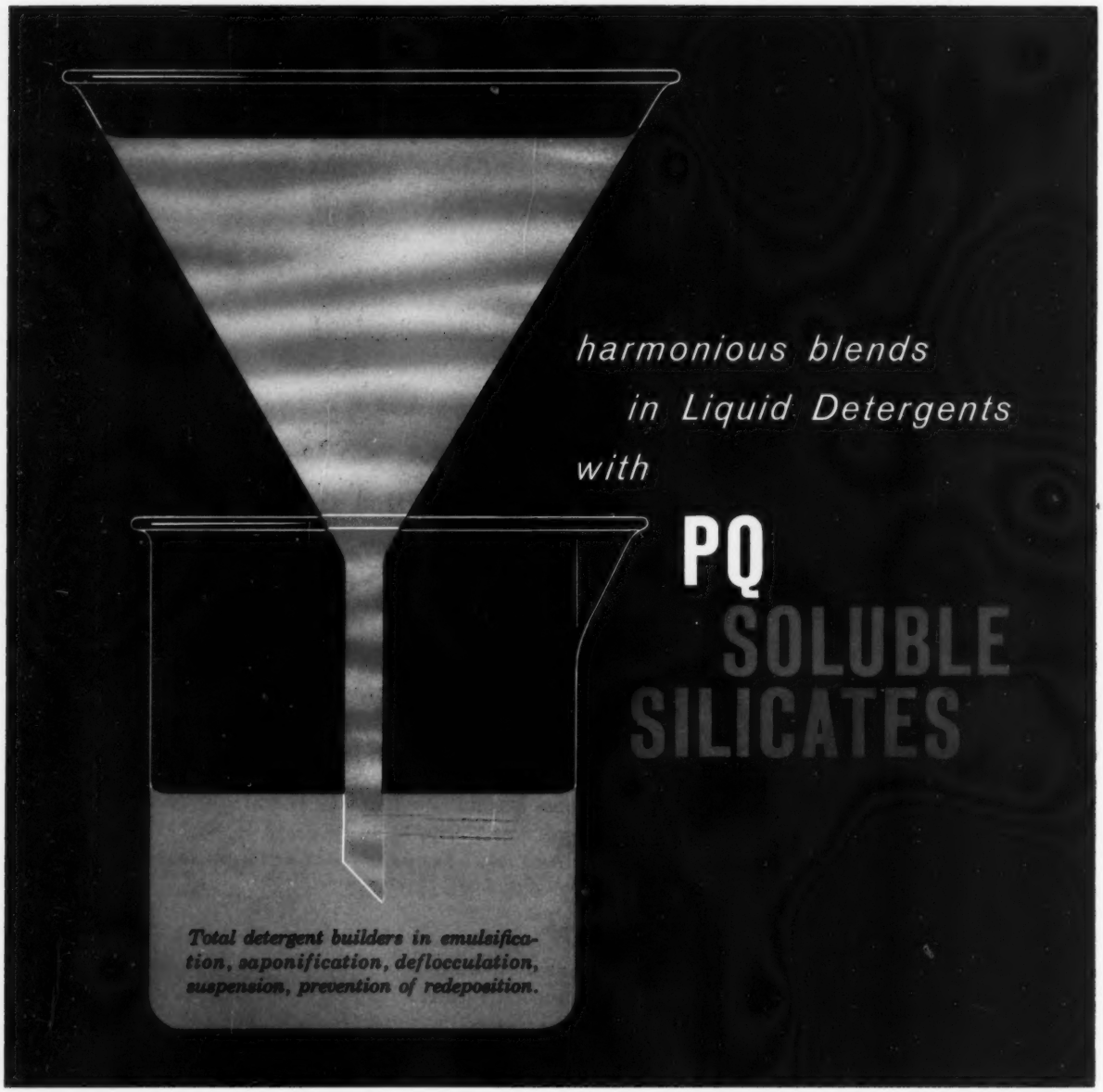

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We welcome the opportunity to supply you with samples of sodium silicate or potassium silicate and to suggest how PQ silicates can be most effectively used in liquid detergents that you are considering.

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SODIUM SILICATES • POTASSIUM SILICATES

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potassium toluenesulfonate

Stepanate T
sodium toluenesulfonate

Stepanate X
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Stepanate AM
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These Stepanates are excellent solubilizing and coupling agents for otherwise incompatible materials. They permit you to take full advantage of combinations of organic surfactants and inorganic phosphates, silicates, etc. Frequently they are the most effective means of overcoming turbidity or stratification in aqueous products containing a sparingly-soluble oil or solid. For light-duty liquids Stepanates are cloud point depressors. Stepanate hydrotropes are practically water white liquids.

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Edens & Winnetka, Northfield, Illinois
Telephone Hillcrest 6-7500

STEPAN

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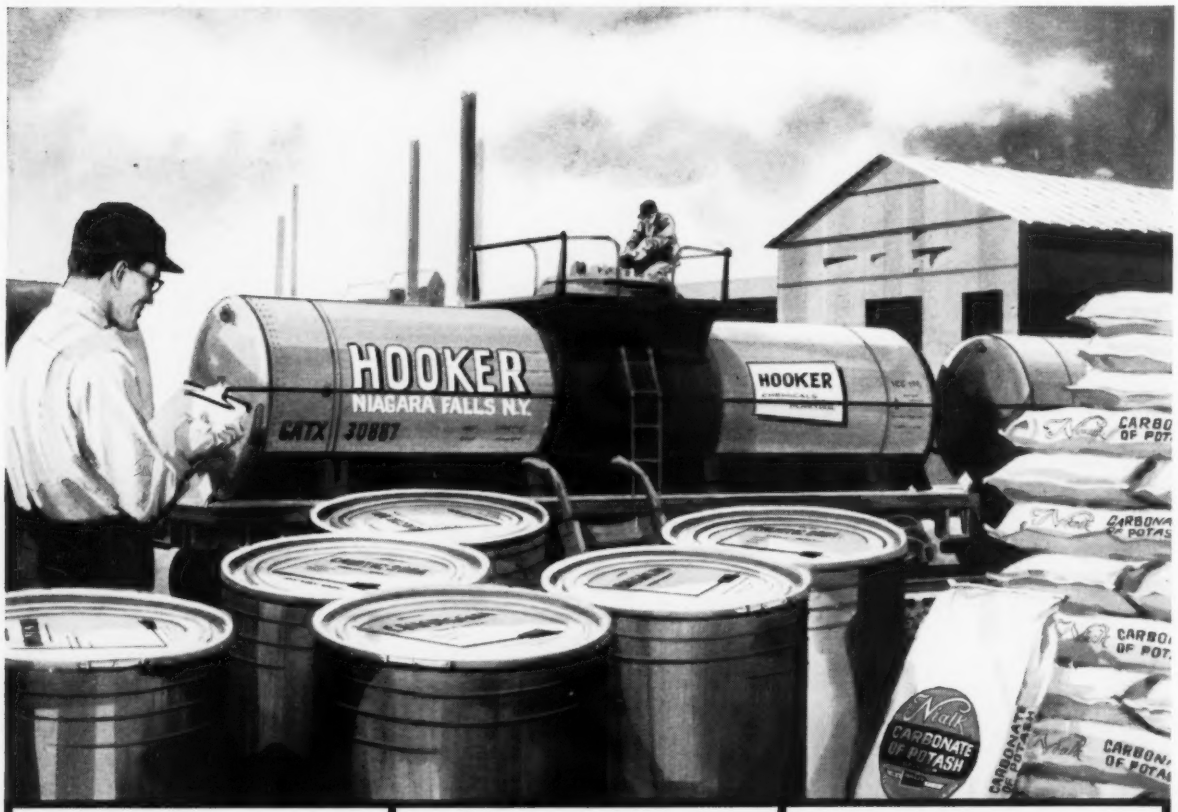
You save on purchasing costs too, because two or more of these consistently uniform alkalies can be ordered *together* in mixed carloads or mixed truckloads. One order, one billing, one responsibility—cuts buying and bookkeeping red tape.

NEW CAUSTIC SODA DRUMS • You don't need a tool kit to open Hooker's new flake caustic soda drums. They flip open, empty easier . . . because the drums have *full* open heads—21 inches across.

The wider mouth also makes the drums more adaptable to re-use.

The next time you're considering alkali requirements, call in our representative who is trained in the economics of these alkalies. Some of his ideas can work to your advantage.



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Rayon grade liquid 50%
Liquid 73%
Rayon grade liquid 73%
Solid
Regular Flake
Crystal Flake
Fine Flake
Phosphated
Special Alkali

Liquid forms available in tank cars and tank trucks, dry forms in drums.

CAUSTIC POTASH

Standard Grades
Liquid 45-52%
Solid 90% and 85%
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Granular, Walnut, Broken, Powder and Crushed—all 90%

Low-Chloride Grades
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Flake 85%

Liquid forms available in tank cars and tank trucks, dry forms in drums.

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Hydrate, Regular 83.5-84.0%
Calcined, Regular 99.2-99.6%
Calcined, Regular Powder 99%
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Calcined, Powder 91-94%
Liquid 47-52%

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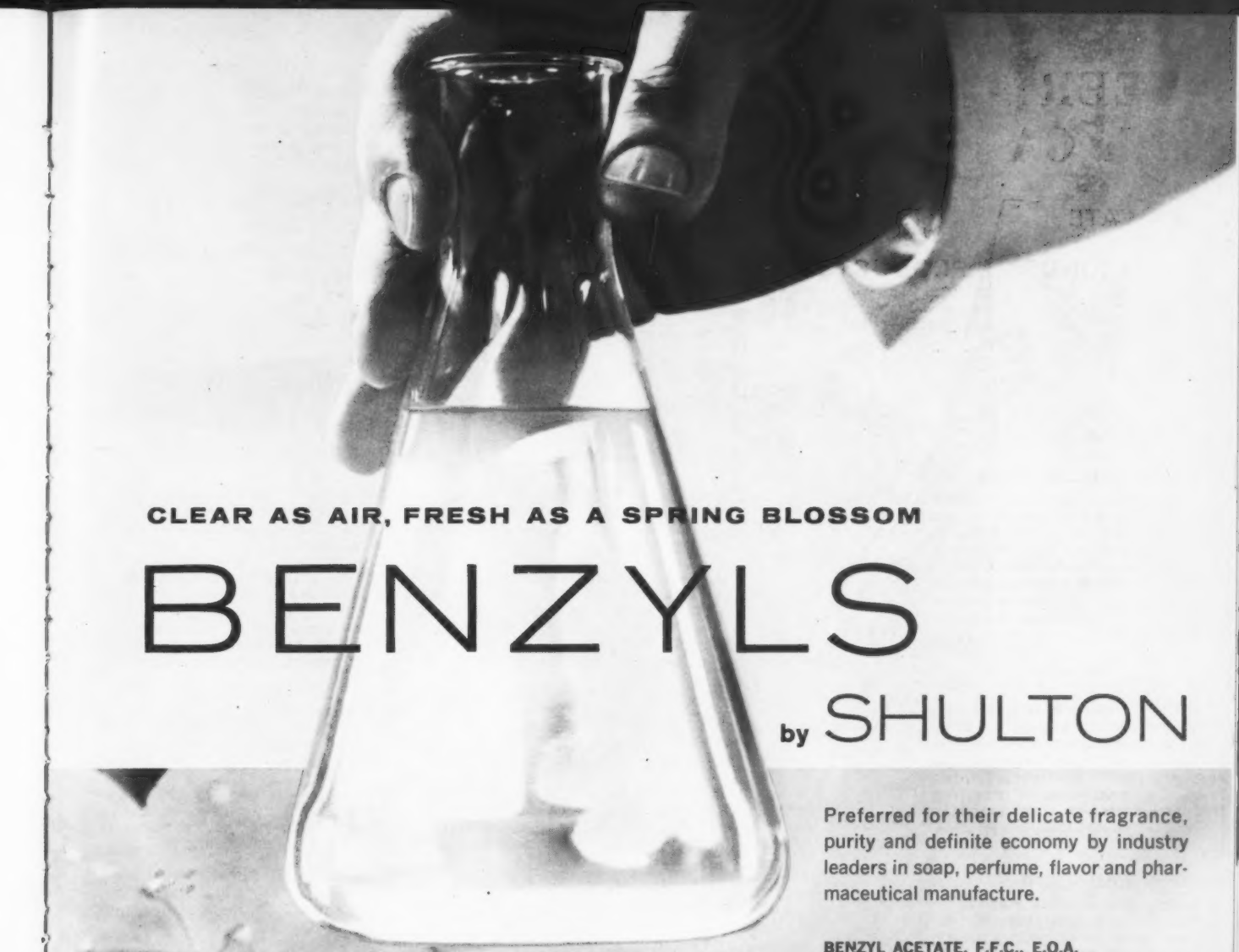

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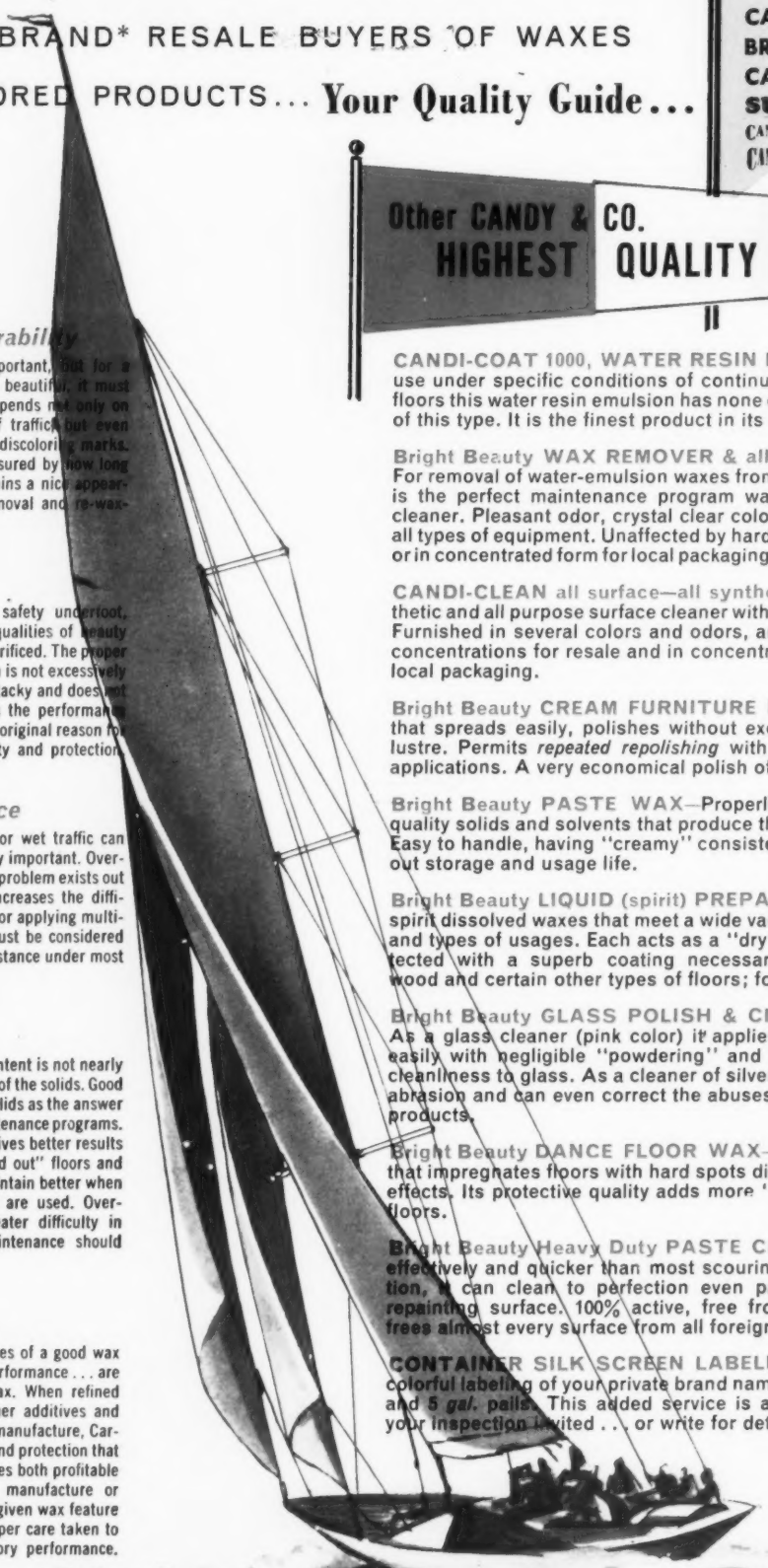
Each of Candy's floor waxes are all-around top quality for certain traffic conditions. They impart the finest protection and beauty to floors for which best suited.

CANDY'S SUPREME (standard)
BRIGHT BEAUTY®
CANDY'S SUPREME Special WR
SUPER CAND-DOX®
CAND-DOX® # CS
CANDI-WAX #6000

Other CANDY & CO. HIGHEST QUALITY PRODUCTS



Beauty and Durability

Initial appearance is important, but for a waxed surface to remain beautiful, it must be durable. Durability depends not only on resistance to abrasion of traffic but even more so on resistance to discoloring marks. Durability should be measured by how long the waxed surface maintains a nice appearance before complete removal and re-waxing is required.

Anti-Slip

Anti-slip, or reasonable safety underfoot, does not mean that the qualities of beauty and protection need be sacrificed. The proper balance—a wax film which is not excessively slippery, yet which is not tacky and does not collect dirt readily—gives the performance that answers the foremost original reason for use of a floor wax—beauty and protection.

Water Resistance

Frequent damp mopping or wet traffic can make water resistance very important. Overdoing this quality when no problem exists out of the ordinary, simply increases the difficulty of complete removal or applying multiple coats. Removability must be considered as important as water-resistance under most normal conditions.

Solid Content

The percentage of solid content is not nearly as important as the **quality** of the solids. Good quality indicates 12% of solids as the answer for most well planned maintenance programs. Two applications of 12% gives better results than one of 18%. "Washed out" floors and other special problems maintain better when more concentrated waxes are used. Overwaxing and resultant greater difficulty in removal for periodic maintenance should be avoided.

Carnauba Wax

The most important features of a good wax . . . all-around quality of performance . . . are built around Carnauba Wax. When refined and compounded with other additives and scientifically controlled in manufacture, Carnauba imparts the beauty and protection that makes the use of floor waxes both profitable and possible. Make-shift manufacture or over-emphasis on any one given wax feature should be avoided and proper care taken to provide for most satisfactory performance.

CANDI-COAT 1000, WATER RESIN EMULSION—As a floor coating for use under specific conditions of continued maintenance on certain types of floors this water resin emulsion has none of the faults associated with coatings of this type. It is the finest product in its class produced up to this time.

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Bright Beauty DANCE FLOOR WAX—Does not "ball-up" and gather dirt that impregnates floors with hard spots difficult to remove . . . free from dusty effects. Its protective quality adds more "floor-years" to expensive ballroom floors.

Bright Beauty Heavy Duty PASTE CLEANER—*Cleans* and *scours* more effectively and quicker than most scouring powders. Depending on application, it can clean to perfection even painted walls to provide a suitable repainting surface. 100% active, free from excessive abrasive qualities, it frees almost every surface from all foreign matter.

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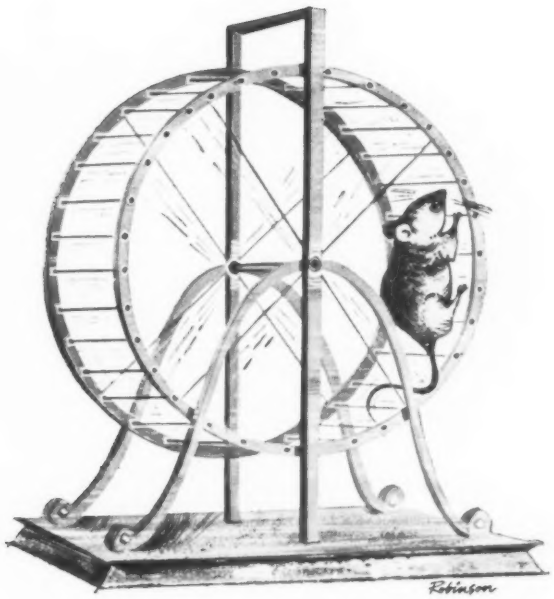

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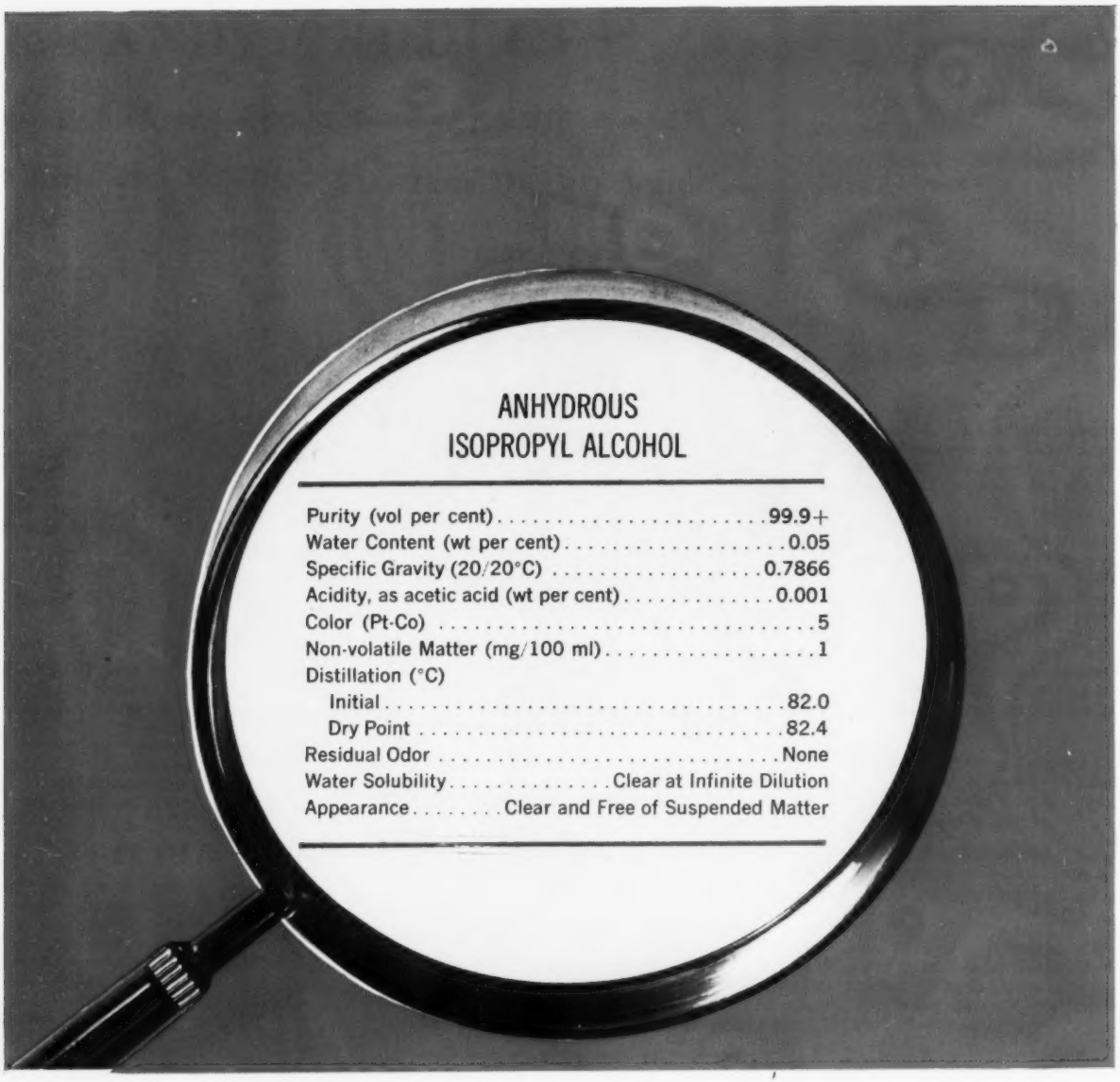
ANHYDROUS
ISOPROPYL ALCOHOL
Purity (vol per cent) . . . . . 99.9+
Water Content (wt per cent) 0.05
Specific Gravity (20/20°C) 0.7866
Acidity, as acetic acid (wt per cent) 0.001
Color (Pt-Co) 5
Non-volatile Matter (mg/100 ml) 1
Distillation (°C)
Initial 82.0
Dry Point 82.4
Residual Odor . . . . . None
Water Solubility . . . . . Clear at Infinite Dilution
Appearance . . . . . Clear and Free of Suspended Matter

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Modern Detergents Mean Phosphates and Phosphates Mean Blockson

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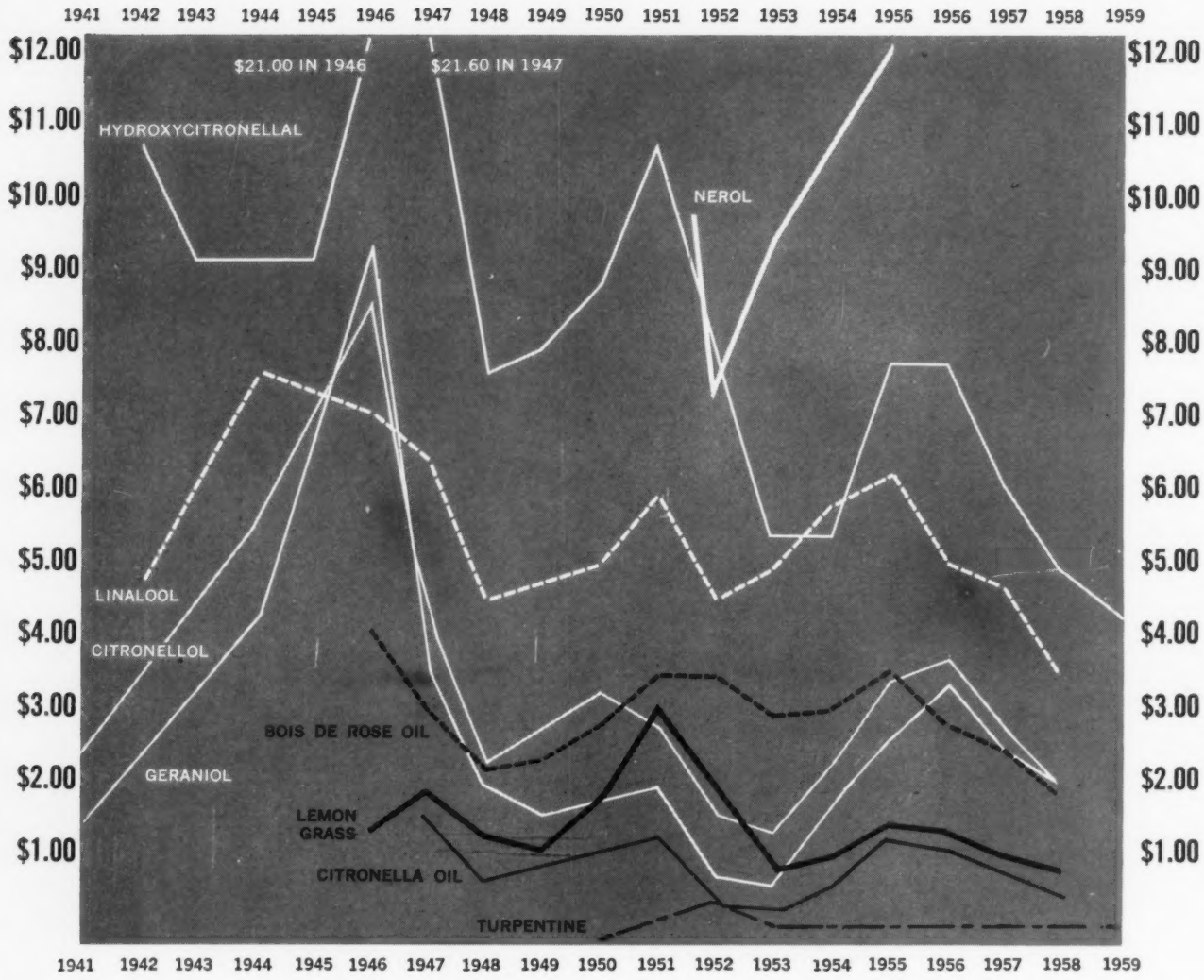

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The historic unpredictability of perfume costs need no longer apply to your perfuming operations. No longer need you "worry" your perfume supplies, stretching them thin in certain products as costs suddenly cycle upwards, avoiding their use entirely in other marginal products.

The new Firmenich-Glidden Aromatics, derived from an abundant domestic source, make it possible for you to use the finest quality aromatics as freely as you wish, in any product you wish, with complete confidence that sudden changes in price, quality, and foreign supplies will not disrupt your manufacturing and marketing program.

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DETERGENT FLAKE

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The uniqueness of Pilot's new standard of purity is in the *Cold Processing:* eliminated are the undesirable characteristics; built in are the cleansing and foaming character.

HD-90 has greater versatility as a result of its higher concentration, an advantage in formulating: *Automotive Cleaners, Dishwashing Compounds, Household Cleaners, Steam Cleaners, Bubble Baths, etc.*

For products with the highest sudsing and cleansing power for your money—investigate Pilot HD-90. Packed in polyethylene-lined fibre drums and 5-ply paper bags. Formulas and samples yours for the asking. Write:

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Sulfonate Liquids
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And you are always assured of high quality caustic in the grade and form you need, produced under modern automatic controls. Liquid grades are handled through nickel pipes, stored in lined tanks and "polish filtered" just before shipment for utmost clarity.

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CAUSTIC POTASH 45% and 50% Liquid: Flake

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✓Exceptional sudsing action
✓Consistent uniformity
✓Light, clear color
✓Mild, pleasant odor
✓Outstanding grease emulsifying qualities
✓Custom blending and manufacturing
✓Mixed truckloads

If you now market or are planning to market a liquid dishwashing detergent for the home, institutional or sanitary supply field, it will pay YOU to look into KRYSTALLEX raw materials. Krystall Chemical is a basic producer of detergent raw materials and can custom-tailor detergents to your precise needs. Every day, KRYSTALLEX detergents find more and more applications in nationally-known products; in hand cleaners, shampoos, textile and floor cleaners, all-purpose cleaners. Krystall Chemical takes special pride in its prompt service on all surfactant requirements, whether it be for a drum, carload or tank car. Write *today* for full details and technical help on how to improve your product, expand your market, boost your profits . . . with KRYSTALLEX raw materials.

SOME OF THE EXPANDING KRYSTALLEX SERIES

Krystallex S-63 — A specially purified sodium dodecylbenzene sulfonate. Clear and odorless liquid. Excellent base for clear liquid formulations such as liquid dishwashing detergents.

Krystallex S — A dodecylbenzene sulfonic acid.

Krystallex S-75 — An ammonium alkyl phenoxyethylene sulfate.

Krystallex LA — A 100% active nonionic fatty acid alkanolamide manufactured for use as a foam stabilizer.

Krystallex C—A sodium lauryl sulfate—characterized by its uniform high viscosity—excellent base for creme shampoos.

Krystallex A — A sodium lauryl sulfate with a very low salt content and low viscosity.

Krystallex T—A triethanolamine lauryl sulfate. High activity, low cloud point, very light color and color stability toward light.

Krystallex S-26—A new detergent manufactured exclusively for shampoo use.

Krystall chemical co.

Phone Bittersweet 8-2325 • 1301 W. Belden Ave., Chicago 14, Ill.

"SPECIALTY ORGANIC CHEMICALS"

INTRODUCING: WHITE LILAC SUPREME...

....AND THE TWENTY-THREE INGREDIENTS THAT COMPOSE IT

This fragrance is a classic example of what the creative perfumer can accomplish, given the attributes of experience, scientific knowledge, imagination and—last but not least—the fine, basic materials with which to work. WHITE LILAC SUPREME is a floral composition distinguished not only for the beauty, fidelity and tenacity of its fragrance, but also for its amazingly low cost. It is truly an outstanding achievement in perfume synthesis. Now the building blocks of this floral specialty can be readily identified by reference to the numbered diagram shown on the back of this insert. What cannot be shown are the precisely measured fractions of each of these ingredients as evolved in the development of this compound and as specified in its formula. Obviously, it is these minuscule details that determine the character and perfection of the finished product. It is also this fact that strengthens our own long-held belief in the importance of quality, purity and uniformity as minimal criteria for the selection of *all* materials used in the manufacture of extracts, toiletries and cosmetics. That is why *utmost dependability of its basic materials* has always been held paramount in the processing and production of FRITZSCHE products.

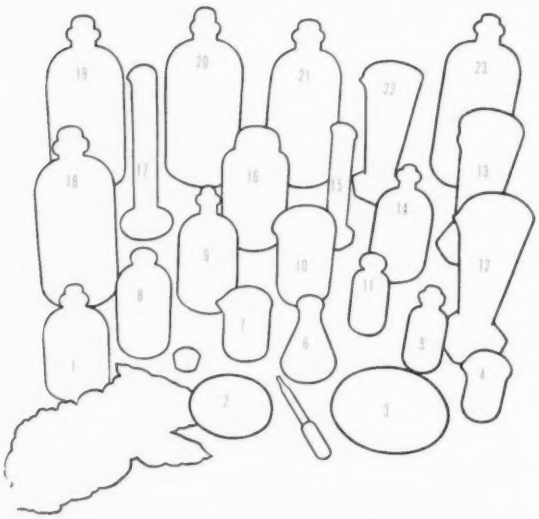
SEE OVER

FRITZSCHE

OUR 90th AND GREATEST YEAR!

1871... ...1961

KEY TO PHOTO *(on facing page)* . . . .



1. **OIL YLANG YLANG EXTRA**—Exclusive source of supply.
2. **INDOL**—Commercially available synthetic.
3. **HELIOTROPIN EXTRA**—Exclusive source of supply.
4. **ABSOLUTE OF JASMINE SEILLANS®**—Exclusive source of supply and special processing.
5. **OIL ROSE USP KAZANLIK EXTRA**—Exclusive source of supply.
6. **CINNAMIC ALCOHOL**—Clifton produced synthetic.
7. **HYDROXY-CITRONELLAL EXTRA**—Clifton produced synthetic.
8. **TERPINEOL ABSOLUTE**—Isolated by Clifton process.
9. **AMYLCINNAMIC ALDEHYDE** — Commercially available synthetic.
10. **RHOSIDOL No. 32569**—F.B. specialty.
11. **ANISIC ALDEHYDE**—Commercially available synthetic.
12. **FRITZBRO® SYNTHETIC FLOWER OIL HELIOTROPE**—F.B. specialty.
13. **FRITZBRO® SYNTHETIC FLOWER OIL NEROLI**—F.B. specialty.
14. **ISOEUGENOL METHYL ETHER**—Clifton produced synthetic.
15. **NEROLIDOL SYNTHETIC**—Commercially available synthetic.
16. **MUSK KETONE**—Commercially available synthetic.
17. **GERANIOL EXTRA**—Isolated by Clifton process.
18. **PHENYLETHYL ALCOHOL N.F.**—Commercially available synthetic.
19. **CYCLAMEN ALDEHYDE**—Commercially available synthetic.
20. **EUGENOL USP EXTRA**—Isolated by Clifton process.
21. **BENZYL ACETATE**—Commercially available synthetic.
22. **FRITZBRO® SYNTHETIC FLOWER OIL JASMINE EXTRA FINE**—F.B. specialty.
23. **laevo-LINALOOL F.B.**—Isolated by Clifton process.

IS DEPENDABILITY OF MATERIALS IMPORTANT TO *YOU*?

EXAMINE THE ABOVE LISTING of materials that compose this formulation for WHITE LILAC SUPREME. Bear in mind that each of these ingredients was carefully chosen for its specific contribution—however slight—to the finished whole. The result of such select blending is a fragrance of eloquent beauty which can be reproduced time and time again, *providing* these identical materials are faithfully employed in its production. . . . It is when the perfume/cosmetic manufacturer's basic materials *do not* adhere to original formula specifications for uniformity and quality that he runs into serious trouble. Recognizing its responsibility in this connection, FRITZSCHE takes particular pride in the day-in, day-out consistency and dependability of its many fragrance specialties, natural flower oils and aromatic chemical products. . . . If these same considerations are of concern to you, we hope you'll accord us an opportunity to tell you more about our fine products and helpful services. Write us, won't you?

FRITZSCHE BROTHERS, Inc.

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Branch Offices and *Stocks: Atlanta, Ga., Boston, Mass., *Chicago, Ill., Cincinnati, Ohio, Greensboro, N. C., *Los Angeles, Cal., Philadelphia, Pa., San Francisco, Cal., St. Louis, Mo., Montreal and *Toronto, Canada; *Mexico, D. F. and *Buenos Aires, Argentina. **Plants:** Clifton, N. J. and Buenos Aires, Argentina.

MANUFACTURERS AND SUPPLIERS OF ESSENTIAL OILS, AROMATIC CHEMICALS, BASIC PERFUME AND FLAVOR RAW MATERIALS

AFTER CLOSING---

Sweet To Schenectady

Robert S. Sweet has been appointed New England technical sales representative for Schenectady (N. Y.) Varnish Co., it was announced recently.

Robert S. Sweet

Mr. Sweet, with over 10 years experience in the chemical specialty field, was previously associated with Success Wax, Ltd., East Quebec City, Canada, as technical director. Success Wax was recently acquired by Lever Brothers, Ltd., Toronto. Prior to that he was a product develpment and technical service engineer with UBS Chemical Co., a division of A. E. Staley Manufacturing Co., Cambridge, Mass.

He was one of the founders of the Canadian Manufacturers of Chemical Specialties Association and served on the board of directors for a number of years. Mr. Sweet has also been active with the Chemical Specialties Manufacturers' Association in the U.S.A., and has co-authored technical papers presented at its meetings.

—★—

Dubow Chemical Moves

Dubow Chemical Corp., formerly located at East Meadow, N. Y., has moved to a new plant in Freeport, L. I., N. Y., which centralizes laboratory, manufacture, distribution and sales offices of the four year old firm. Dubow manufactures cleaners, sanitizers and preservatives.

—★—

Texize Personnel Changes

Texize Chemicals, Greenville, S. C., recently announced three appointments to the firm's headquarters staff. Tommy D. Greer, formerly vice-president in charge of the industrial products division, has been named administrative assistant to the president. He will act as coordinator between the manufacturing, production, research and sales departments. W. N. Woodward has been appointed controller. He was formerly with the Duplan Corp., Winston-Salem, N. C. Joseph H. Hines, formerly with the Celanese Corp. of America in Charlotte, S. C., has been named office manager.

Bon Ami License Agreement

Bon Ami Co., New York, recently signed a license agreement with American Home Products Corp., New York, which will return an expected 17 cents a share to Bon Ami, according to Ralph A. Schwaikert, Bon Ami president. He said American Home Products Corp. had agreed to pay royalties for use of United States Patent No. 2,955,047, a composition for which Bon Ami was granted a patent last October.

Bon Ami "Jet-Spray," produced under the patent, is a window cleaning composition containing a dimethyl polysiloxane silicone that is designed to eliminate streaking, impart a high lustre and be applied quickly. Sales of "Jet-Spray" have increased 43 per cent since 1958, it was reported. Sales

More Evidence Asked in Clorox Merger

THE Federal Trade Commission has ordered that additional evidence be received to determine whether Procter & Gamble Co., Cincinnati, violated the Celler-Kefauver antimerger law, Section 7 of the Clayton Act, by acquiring Clorox Chemical Co.

P&G acquired Clorox on August 1, 1957 through an exchange of stock valued at approximately $30 million and the FTC's complaint challenging the acquisition was issued on September 30, 1957. The complaint charged that the acquisition may substantially lessen competition or tend to create a monopoly in the production and sale of household liquid bleach.

In an initial decision filed June 17, 1960, Hearing Examiner Everett F. Haycraft held that the acquisition violated Section 7 as alleged, and issued an order which would have required P&G to divest itself of all assets acquired, together with all property since added, so as to restore the preacquisition competitive situation.

Remanding the case to the examiner, the Commission ruled in its opinion: "The record as presently constituted does not provide an adequate basis for determining the legality of this acquisition." It directed the examiner to receive evidence relating to the competitive situation as it presently exists in the liquid bleach industry.

In commenting on the FTC's decision, Howard Morgens, president of P&G, said: "We are very gratified that the Commission has set aside the Hearing Examiner's initial decision and has determined that the record shows no violation of the law. If there should be further proceedings we are confident that they will reinforce our position that Procter & Gamble's acquisition of the Clorox business was completely legal and proper."

of the licensed product, American's "Easy-Off Window Cleaner," are expected to increase substantially.

—★—

George Melven Retires

George A. Melven, senior vice-president of Gillespie-Rogers-Pyatt Co., New York, retired effective June 30, after 50 years with the firm and its parent company L. C. Gillespie & Sons.

—★—

Dema Issues Data Sheets

Liquid detergent or sanitizer proportioners 181-B and 182-B are described and illustrated in two catalog sheets just issued by Dema Engineering Co., 10020 Big Bend Blvd., St. Louis 22. Both models are automatic push button liquid controllers fabricated from stainless steel, featuring automatic reset to clear water and designed to draw from any size container.

Model 181-B features regulating tips installed in the hose adapter, whereas 182-B has a metering screw permitting adjustment to a wide range of concentrations.

Further details pertaining to the proportioners and accessories are supplied on the catalog sheets available from Dema.

—★—

Joins Fritzsche Club

John H. Mallory, director of purchases, Fritzsche Brothers, Inc., New York, was recently named the 96th member of the firm's Quarter Century Club. Mr. Mallory celebrated 25 years of service with the company on June 14th.

Ketrick Joins Ardmore

Paul J. Ketrick has been named sales manager of Ardmore Chemical Co., Lyndhurst, N. J., it

Paul J. Ketrick

was announced recently. He was formerly midwestern sales manager for Ultra Chemical Works, Inc., a division of Witco Chemical Co.

—★—

Glidden Advances Rankin

Tall oil, tall oil fatty acids, and terpene chemicals sales of Glidden Co., Cleveland, are now under the direction of James C. Rankin, it was announced last month by George M. Halsey, vice president in charge of the chemicals division. Mr. Rankin has been advanced to general sales manager—metals and organic chemicals with headquarters at Glidden's home offices in Cleveland.

With Glidden since 1942, Mr. Rankin started in the general sales department of the paint division. Subsequently he held a number of managerial posts in the paint and other Glidden divisions until 1959, when he became national accounts sales manager for the chemical division.

—★—

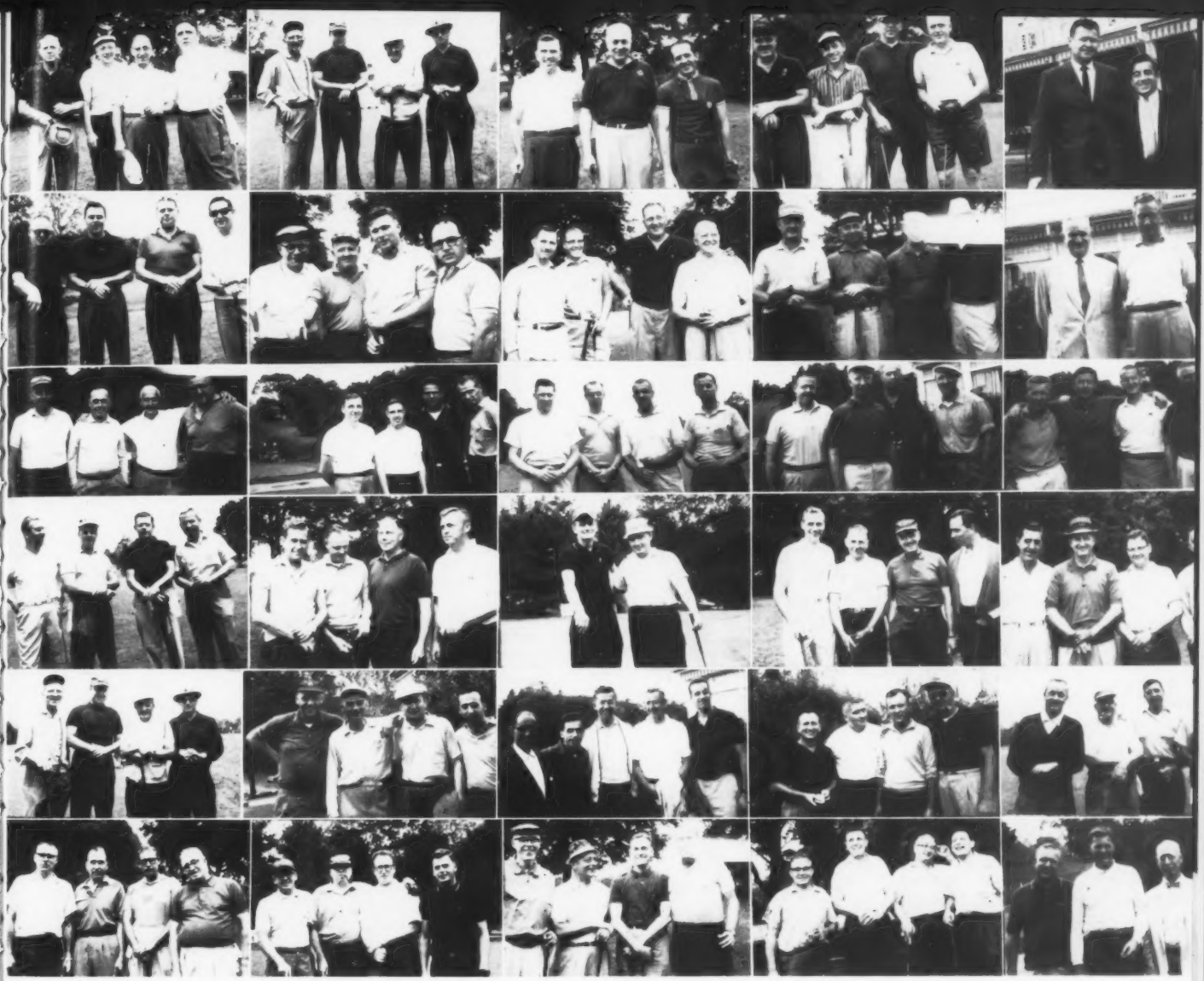
"Vapona" for Home Use

"Vapona" 0.5 per cent pressurized spray, solution, and emulsifiable concentrate have been passed for nonprofessional use in household, restaurants, theaters, food processing plants, warehouses, etc., it was announced early this month by Shell Chemical Co., Agricultural Chemicals Div., New York.

Main active ingredient of "Vapona" is 2,2-dichlorovinyl dimethyl phosphate. The pressurized spray contains 0.46 per cent/weight of the latter, plus 0.04 per cent of related compound, 49.50 per cent petroleum distillate, and 50 per cent inert ingredients. The product is said to be effective against resistant and non-resistant insects. It is suggested for use against flies, mosquitoes, wasps, gnats, flying moths and other small flying insects and for control of cockroaches, ants, spiders, and silverfish.

Shell has just published data sheets giving use information and a specimen label for 0.5 per cent "Vapona" insecticide pressurized spray in compliance with the most recent pertinent regulations. The sheets are available from Shell's Agricultural Chemicals Division, 110 West 51st Street, New York 20.

View of speakers' table at the annual CIBS Ladies Day luncheon held June 8, at the Hotel Pierre, New York. Robert Ring, Duveen Soap Corp., Long Island City, N.Y., CIBS president, is seated fourth from the right and guest speaker, Harry Hershfield is on his left. Mr. Ring gave full credit for the day's success to Walter Morton, Hazel Atlas Glass Division, Continental Can Co., and Dallas D. Roush, Owens-Illinois Glass Co., who handled all the arrangements.



If your picture was taken at the CSMA eastern golf outing last month and fails to appear with those above, blame it on our inexperienced photographer. Our regular photographer was unable to attend.

CSMA Golf Tournament

FOR the second consecutive year the low gross score of the annual golf tournament of the Chemical Specialties Manufacturers Association wound up in a two-way tie that had to be decided by matching cards. Tournament chairman, Frederick G. Lodes, Lodes Aerosol Consultants, Inc., New York, shot a low gross score of 76. He beat out M. Dennos of Schenectady Varnish Co., Schenectady, N.Y., who had the identical score, in matching cards. Mr. Lodes won the CSMA trophy and a leather golf bag.

The second annual CSMA golf tournament was held June 27 at Knollwood Country Club, Elmsford, N.Y.

Robert J. Hamilton of General Aniline & Film Corp., New York, won third low gross with a score of 77. Other low gross winners were: J. McCullough, Precision Valve Corp.; L. Marvinney, J. B. Williams Co.; E. Johnson, Crown Cork & Seal Co.; J. Gabrielson, Avon Products; H. Richardson, Foster-Forbes Glass Co., and Eugene McCauliff, Glyco Chemicals Division.

Donald Lavelle of Aromatic Products Co., New York, with a 67, won low net, which was figured on the basis of the Callaway System. Other low net winners included:

E. Helfer, Powr-Pak, Inc.; W. Gavin, Nopco Chemical Co.; E. Keenan, Gillette Co.; A. F. Lindsay, International Flavors & Fragrances, Inc.; S. Noto, Sun-Lac, Inc.; F. Messier, Atlas Supply Co.; K. Kruckman, Precision Valve Corp.; J. McCarthy, Lever Brothers Co.; Gordon Gilroy, Precision Valve Corp.; E. G. Weierich, Nopco Chemical Co.; Seth Schneible, Crown Cork & Seal Co.; W. O'Brien, Shulton, Inc.; R. Ferrin, B. T. Babbitt, Inc.; Leonard Cannella, Continental Can Co.; J. Richton, guest; B. Madsen, Union Carbide Chemicals Co.; Leonard J. Oppenheimer, West Chemical Products, Inc.; G. Moriarity, John H. Breck, Inc.; D. Phillipson, Pennsalt Chemicals Corp.

Prizes for the special "Early-Bird" tournament were won by M. Goldner and V. W. Atlas of Warwich Laboratories, and Robert Sharp and John Stoddard of Pren-

tiss Drug & Chemical Co. for being first off the tee. Other "Early-Bird" winners included Frederick G. Lodes and K. W. Kruckman.

Closest to the pin on Knollwood's famous 19th hole were William Brosie of John C. Stalfort & Sons with a shot three feet from the pin. Next closest to the pin was Joseph Gregory of Newman-Green Co., and third place was won by L. Mason of Continental Can Co.

In spite of early morning rains, 139 persons played golf, and 182 were present for dinner.

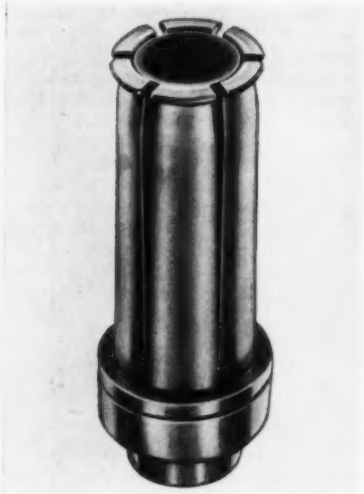
The Western Tournament of CSMA will be held Tuesday, Sept. 19, at Itasca Country Club, Itasca, Ill. Charles E. Allderdice, Jr., Bell Chemical Co., Chicago, and Robert W. Svendsen of Chase Products Co., Broadview, Ill., are in charge of arrangements for the western tournament.

—★—

New Aerosol Crimper

Aerosol Products, a division of Royal Products, Plainview, L. I., N. Y. recently introduced its "Model No. APCRI" plunger and crimping tool, designed for standard one inch aerosol can valves. The new tool is claimed to crimp over 500,000 cans without sign of wear of jaws or plunger. It was also reported that there are no hang-ups or pickups. When the plunger drops it expands six resilient, precision tooled segments for the crimping contact. When the plunger withdraws, the segments snap back into position for instant positive release of the can, ready for the next crimp, according to the company.

New combination plunger and crimping tool for aerosol cans, recently introduced by Aerosol Products, division of Royal Products, Plainview, L. I., N. Y.



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Urethane Floor Finishes

Claims that clear urethane floor sealers are twice and three times as effective as "conventional" floor finishes and "other types of commercial (concrete) floor sealers" are contained in a recent issue of "Product News." The publication is issued by the National Aniline Division of Allied Chemical Corp., 40 Rector St., New York 6.

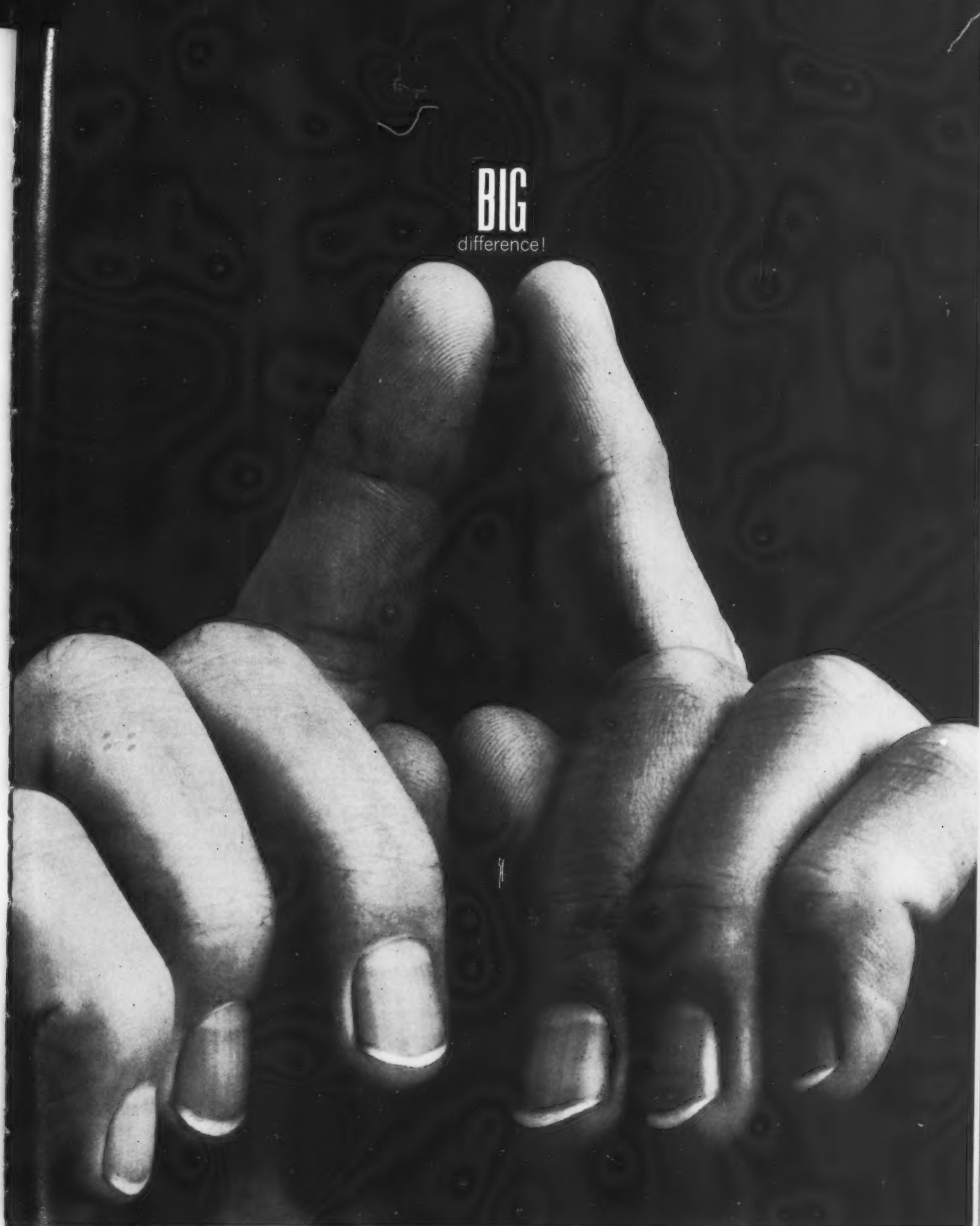
"Clear urethane floor varnishes and sealers are superior to ohter types in drying time, surface adhesion, coating life, and resistance to abrasion and mar, water, and detergents," according to the report in "Product News." The title of the article is "Urethane Wood Finishes Catch On." Case histories of gym and other floors are included.

New hydrocarbon filling line at Stalfort's Pressure-Pak plant.

Hydrocarbon Aerosol Line

A completely new, "outdoor" hydrocarbon aerosol filling line is now in operation at the Pressure-Pak plant of John C. Stalfort & Sons Co., Baltimore, Md. The new facility is a four-door, daylight type room with flooring of spark-proof construction, raised several inches above the concrete flooring of the platform on which it rests. Except for the conveyors and a 15 head rotary gasser, the entire hydrocarbon operation is outside the plant. It consists of the filling room, a new steam power plant and, at some distance, a storage area for the gas. As part of the safety equipment, mine safety appliance monitoring instruments have been installed. Air in the lower level of the gassing room is analyzed, and any trace of gas escaping from the filling equipment is detected before it reaches explosive power, the company states.

The new equipment joins six other lines of packaging equipment, one of which is a completely "sanitized" line, used for foods, pharmaceuticals and other products requiring unusual sanitation in packaging; another "midget" line used primarily for cosmetics, colognes and allied products.



A pianist strikes a single wrong note and there is musical discord. A perfume contains a scintilla too much of a fragrance accent and there is fragrance discord. This is the little difference that makes all the difference in the product you are selling. Thirty-eight years of working with perfume oils have taught Felton when so much is too much in creating fragrances. L the man from Felton help you win more customers with a fragrance th pleases every time and all the time! Plan to get in touch with him tod Felton Chemical Company, Incorporated, 599 Johnson Ave., Brooklyn 37, N

Felton

Give her the detergent she wants . . .

Custom-blend with TERGITOL Nonionics

To be certain that the products she buys are *yours*, custom-blend your detergents with TERGITOL nonionics. The product that out-cleans and outshines competition is the one she'll favor; and TERGITOL nonionics can give your detergent the properties that fill all her exacting demands.

From CARBIDE you can obtain nonionics with properties ranging from complete oil solubility to complete water solubility. Also you can obtain information on blending these nonionics to give you the precise properties you want for your specialty products.

Here are two nonionics that should be of particular value to you—

TERGITOL NPX—a nonyl phenyl polyethylene glycol ether containing 10.5 moles of ethylene oxide, is ideal for the base of your all-purpose detergents and wetting agents. Its cloud point is in the 60 to 65°C. range, and it is compatible with soaps and other surfactants. TERGITOL NPX is soluble in many alcohols, ketones, glycols, glycol-ethers, and esters; and its stability is not affected by acids, bases, or salts.

TERGITOL TP-9—with 9 moles of ethylene oxide and a cloud point in the 51 to 56°C. range, is similar to NPX in its usefulness, and is designed for use in water at less than 125°F.

The CARBIDE Technical Representative in your area will be happy to discuss your special requirements with you. Give him a call and see what a customized formula can do for your products. Or write: Union Carbide Chemicals Company, Division of Union Carbide Corporation, 270 Park Avenue, New York 17, New York.

TERGITOL and UNION CARBIDE are registered trade marks.

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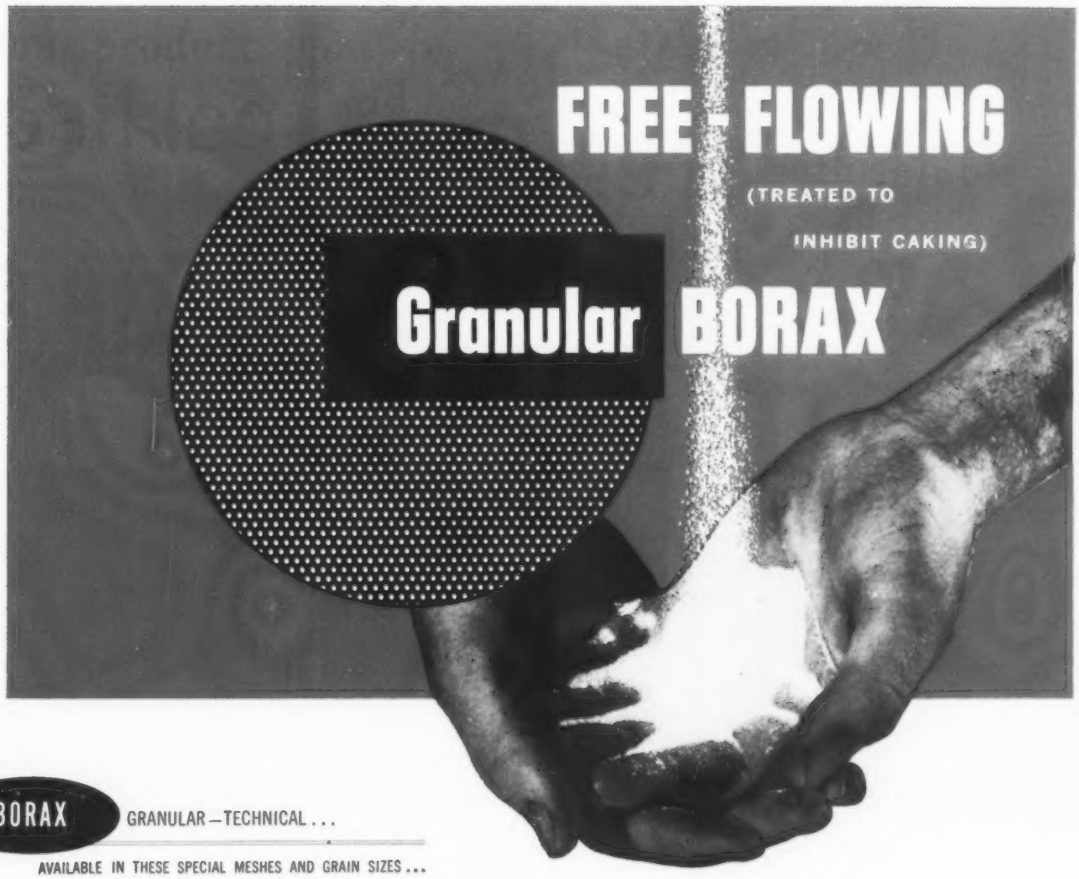

BORAX GRANULAR—TECHNICAL . . .

AVAILABLE IN THESE SPECIAL MESHES AND GRAIN SIZES . . .

Name & Screen Designation	Typical Particle Size Range U. S. Standard Sieve No.	Screen Specification U. S. Standard Sieve No. When Packed
Granular 8/40 (Special Mesh)	+ 8 Nil + 40 96.8%	+ 45 min. 95%
Granular 8/60 (Special Mesh)	+ 8 Nil + 60 80.0%	+ 8 none +100 min. 90%
Granular 30/60 (Special Mesh)	+ 30 0.5% + 60 69.8%	+ 30 max. 1% +100 min. 80%
Granular 30/70 (Special Mesh)	+ 30 0.3% + 70 71.0%	+ 30 max. 1% + 40 max. 20%
Granular 30/80 (Special Mesh)	+ 30 0.8% + 80 76.6%	+ 30 max. 1%
Granular 30/100 (Special Mesh)	+ 30 Nil +100 86.7%	+ 35 none +100 min. 85%
Granular 40/100 (Special Mesh)	+ 40 Nil +100 89.0%	+ 40 max. 0.5% +100 min. 88%
Granular 40/140 (Special Mesh)	+ 40 0.1% +140 88.8%	+ 35 none +100 min. 50%
Granular 40/200 (Special Mesh)	+ 40 0.1% +200 84.1%	+ 30 none
Granular 60/200 (Special Mesh)	+ 60 0.1% +200 66.7%	+ 60 max. 1%
Granular 80/200 (Special Mesh)	+ 80 2.0% +200 47.6%	+ 60 none + 80 max. 5%

Powdered Hand Soaps are better performers when borax is part of their make-up. They work better in any water — cut grease quicker — and feel smoother. Our granular borax is free-flowing and 100% soluble. This material is now available to you in any of the many special uniform meshes listed at left. Samples, bulletins, or technical advice can be obtained from the sales office nearest to you. Write today!

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From the
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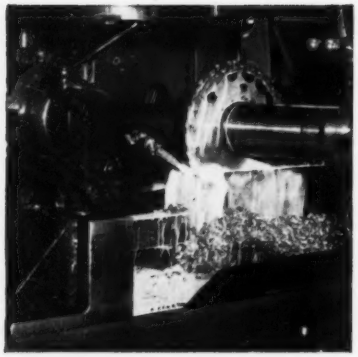
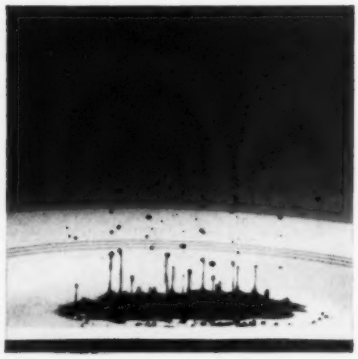
the broadest line of anionic surface-active agents in America



Sonneborn Chemical and Refining Corporation

Petroleum Sulfonates

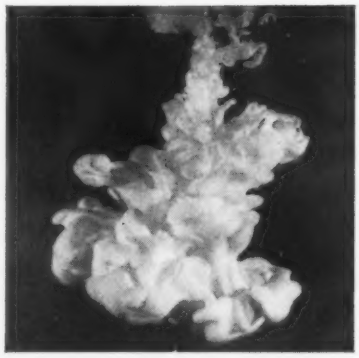
Petronates®: a full line of oil- and water-soluble surfactants whose properties as wetting, dispersing and emulsifying agents and rust inhibitors give them wide use as lube oil, fuel oil and gasoline additives, and in manufacturing such products as drilling muds, dry cleaning soaps, cutting oils, metal degreasers, rust preventives and textile and leather processing oils. Available as sodium, calcium, barium, magnesium and ashless salts. Other Surfactants: Oxidized hydrocarbons for use as rust preventives and emulsifiers.



Ultra Chemical Works

Alkyl Aryl Sulfonates

Sulframins®: basic surface-active agents for the manufacture of detergents and cleaning compounds for industrial, institutional and domestic use...and for a variety of other industrial applications such as air-entraining agents for concrete and for gypsum wallboard. Other Surfactants: Hydrotropes—xylene and toluene sulfonates for use as solubilizing and coupling agents; Ultrapoles®—conventional alkanolamine condensates and superamides; Neopones®—nonionics for various detergent tasks.



Organic Chemicals Division

Oil Soluble Salts of Dodecylbenzene Sulfonic Acid

Emcols: emulsifiers for oil/water and water/oil systems; wetting agents; detergents for hydrocarbon solvent systems; salt tolerant anionics for emulsifying solvents in high salt content aqueous solutions. Other Surfactants: fatty-acid esters, quaternary ammonium compounds, fatty-acid amides; alkanolamine condensates for such products as shampoos, lotions, creams and other cosmetics, specialty cleaning compounds, industrial emulsifiers, and industrial processing.

The organizations whose products are listed above are all subsidiaries and divisions of Witco Chemical Company, Inc. Together they represent sources for a unique range of surface-active products for industrial, agricultural and domestic applications. Further information on each group of products is available in our brochures:

Please indicate which meets with your interest—we will be happy to forward it immediately.

- ▶ "Sonneborn Purified Petroleum Sulfonates,"
- ▶ "Ultra Surface Active Agents and Their Applications,"
- ▶ "Emcol Surface Active Agents."

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here's where
your product
sparkles

and here's where
it shines

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TKPP

...double-action salesmaker
for liquid detergents,
all purpose cleaners and
dishwashing compounds!

High solubility of FMC tetrapotassium pyrophosphate now helps you pack double sales-punch into your liquid detergent products.

Being low in insolubles and orthophosphates, FMC TKPP produces clear solutions, free of turbidity and high in detergency, emulsifying efficiency and water softening action. That means your product looks good on the shelf, looks even better in action!

For convenience and economy, you can get FMC TKPP in granular or powder form (bags, drums or bulk) or as a 60% solution. It's available in mixed truckload or carload shipments with our other phosphates and with CDB® Chlorinated Dry Bleaches.

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Most highly concentrated metasilicate . . . a source of controlled alkalinity. DRYMET puts extra value into your cleaning compounds. Blends easily with other alkalies, soaps, synthetics.	Ready-to-use, power-packed, highest pH detergent silicate. DRYORTH is an excellent heavy duty metal cleaner and laundry detergent. Other important applications.	A medium pH alkaline salt for fast, dependable work at low cost to the user. DRYSEQ has excellent penetrating and wetting-out properties.	Exceptionally pure hydrated metasilicate. Stable crystal structure and uniform spherical granules make CRYSTAMET ideal for compounding free-flowing mixtures. Available in three screen ranges.

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Chemically, Ultrawet 60L is stable in acid and alkaline media, works well in hard water. It blends easily with all other materials commonly used in cleaning compounds, and it is unique since it remains uniform and clear at temperatures as low as 20° F. These qualities greatly facilitate handling and storage.

Ultrawet 60L, like all members of the Atlantic Ultrawet family, is characterized by excellent solubility and extremely low unsulfonated oil content. It has outstanding detergency, foam, wetting speed and surface tension reducing properties. You will find Ultrawet 60L exceptionally versatile in formulation.

Discuss your formulation problems with an Atlantic sales engineer. He is a graduate chemist or chemical engineer, and will be glad to assist you by providing the latest information available for improving products or processes, in the development of new applications or devising ways to cut production costs. For more information, write: Chemicals Division, The Atlantic Refining Company, 260 South Broad Street, Philadelphia 1, Pa.

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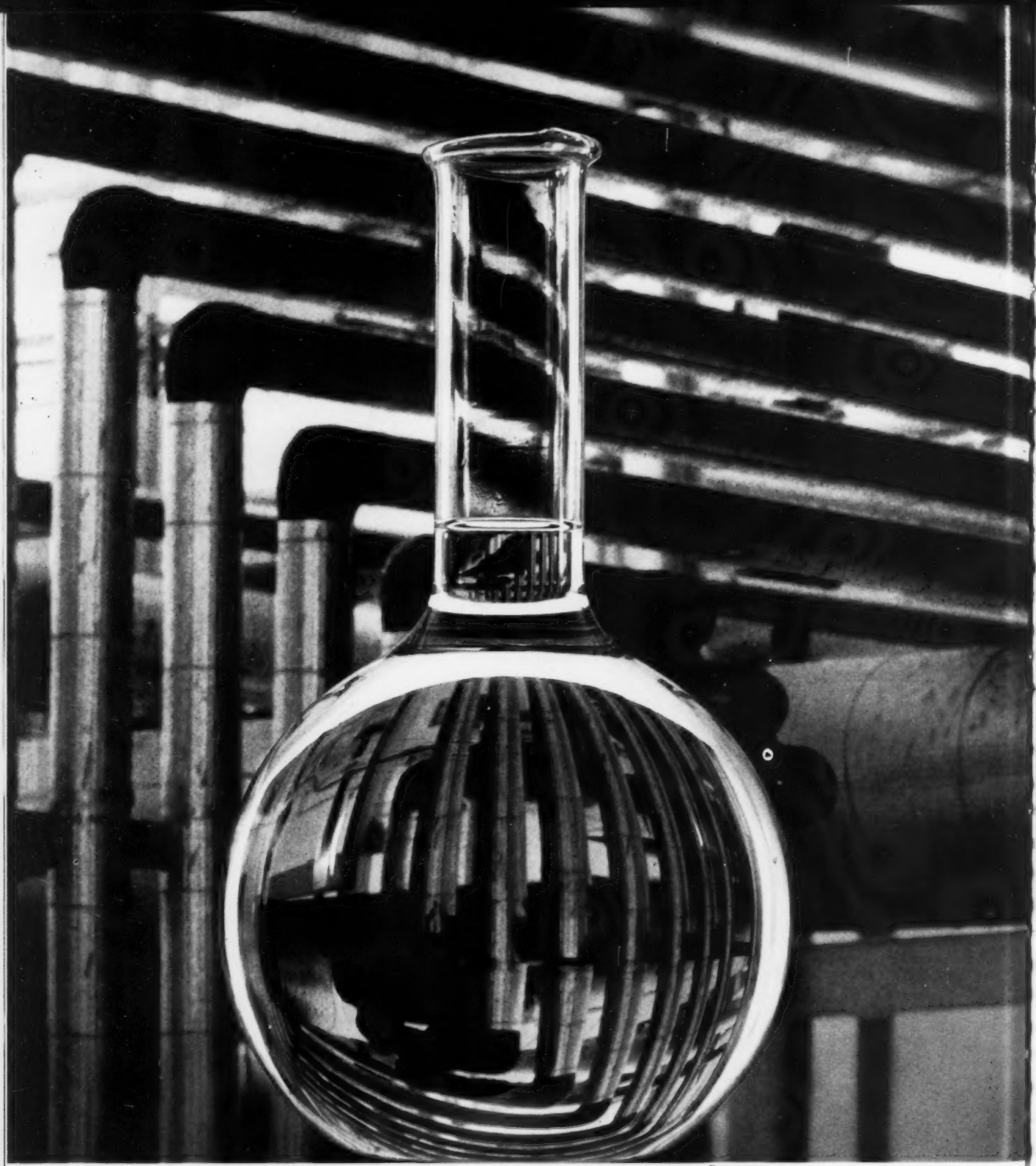
THE ATLANTIC REFINING COMPANY



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Whatever your specific needs, Arizona can answer them with a constant supply of tall oil products tailored to the chemical industry. You can also be sure of dependable service — the same dependable service that has helped make Arizona the world's largest tall oil products supplier. For data sheets, write Arizona Chemical Company, 30 Rockefeller Plaza, New York 20, N. Y.

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Now Available—new Pfizer Sodium Gluconate Granular. This new mesh size lends itself to mechanical blending with granular caustic to produce uniform dry caustic-gluconate combinations.

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Emersol 233 LL Oleic Acid	11/0.5	3/0.5	32/4.5	10/3
Emersol 221 Low Titer White Oleic Acid	15/0.5	5.0/0.5	51/10.5	20/7

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as the editor sees it...

LABELS

At the mid-year meeting of the Chemical Specialties Manufacturers Association recently in Chicago, an exhibit of household chemical specialties was staged. Many products were displayed to illustrate current labeling practices of various firms in the industry. A few products were shown to illustrate what would happen to present labels under the new proposed regulations issued by the Food & Drug Administration for enforcement of the Federal Hazardous Substances Labeling Act. After examination, it was noted that not one label among all those displayed would meet all the requirements of the proposed regulations.

Translated into the total effects on the chemical specialties industry as a whole, this obviously means that if the new regulations were adopted in the form as first proposed, *every label on every container of every household chemical product* on the market would have to be revamped in some degree in order that the label be in full compliance. Even admittedly innocuous products would have to revamp their labels. We feel that this has developed into an absurd situation, a situation which should call for the active intervention of Congress. Either FDA has gone hog-wild or inexperienced hands were at the regulation writing throttle.

* * * * *

GLYCERINE OUTLOOK: GLOOMY

The glycerine outlook, in the words of one of the world's experts, is "lousy." Although production in May declined slightly, 3.1 per cent, stocks have been mounting steadily and at the end of May hit close to 70 million pounds. In less than six months prices have been slashed close to five cents a pound for the refined, with a strong possibility of another cut in the near future. Glycerine is in plentiful supply throughout the world.

In the U. S., stocks of both natural and synthetic glycerine have risen from approximately 48 million pounds back in September to 69.8 million pounds at the end of May, a gain of some 2.6 million pounds from the April figures, and up 21.2 million pounds from the end of May 1960.

Unpleasant as it may be for the soapers, it looks like they are faced with the necessity of a rise in soap prices. Price increases on toilet soaps in May and on bulk soaps in April, which did not even cover the cost of increased fats and oils prices, may have to be revised upward again soon.

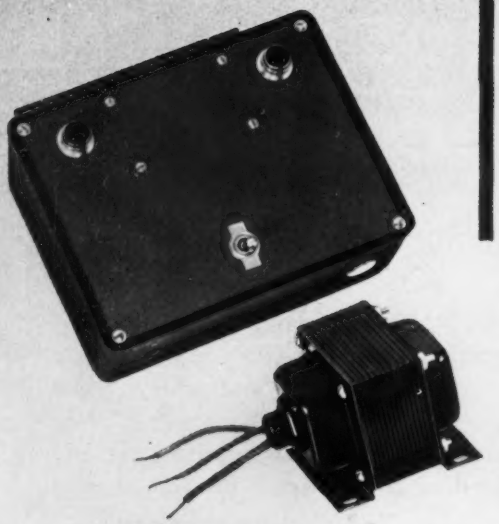
* * * * *

JUMPING THE GUN

Not content to raise the hackles of chemical specialties manufacturers by issuing needlessly harsh proposed regulations to the Federal Hazardous Substances Labeling Act, the Department of Health, Education, and Welfare has gone one step further. Even before industry had an opportunity to give its views on the regulations, HEW has blithely come out with a booklet telling how to comply with the Act. Although the booklet is labeled "A Preliminary Guide to Manufacturers and Shippers of Hazardous Household Chemicals," the impression is created that changes in the *preliminary* regulations will be hard to come by. Why HEW went to the expense (borne, of course, by the taxpayer) of issuing the booklet before final regulations have been set up is something of a mystery. Unless, of course, HEW is going to turn a deaf ear to all suggestions for changes.

The open hearings scheduled for July 13-14 on the regulations are a nice gesture on the part of HEW, providing the Department does not load them with spokesmen for so-called consumer groups, as another hearing in Washington has been doing in recent days. We shall see.

NEW DESIGNS FOR DISHWASHING



Model DC100 Detergent Control

Automatically controls amount of detergent fed into a dishwashing machine. Simplified electrical circuit of sturdy components, coupled with a conductivity cell, responds to conductivity of wash solution which varies with detergent concentration. Green lamp indicates "power on"; red lamp signals need for more detergent. Three-part unit consists of: control head; transformer, and dip-type conductivity cell.

DEMA INTRODUCES A COMPLETE LINE OF LIQUID FEEDERS AND INJECTORS

Four new mechanical dishwashing accessories: *On the left* . . . Dema's new Electric Controller; *on the right* . . . Dema's new proportional Rinse Injector; *below* . . . two new Liquid Dishmachine Detergent Feeders.

Each has an important place in today's mechanized kitchen . . . each is promotionally priced and engineered for easy installation.

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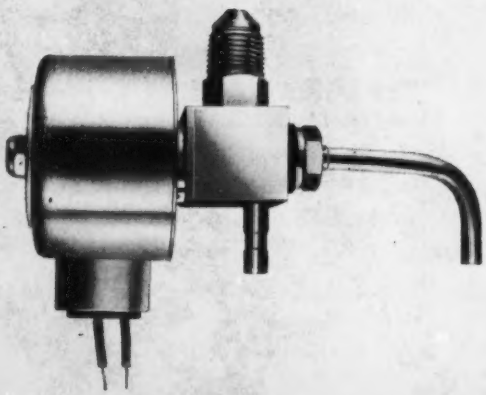
Model 224 Rinse Injector

Injects accurately metered amounts of rinse additive in direct proportion to the flow of water — not at a fixed rate. Has no electric wiring or moving parts . . . installs on either side of rinse valve . . . flow meter shows injection rate. Operates dependably on high or low water pressure. A two-stage venturi is utilized for positive injection. Additive supply is easily replenished while machine is functioning. Bottle holder adjustable for containers up to one quart in size.

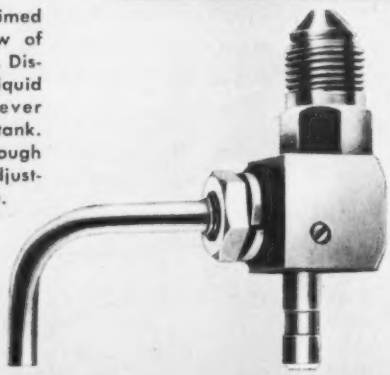
Model 219 Liquid Feeder

Dispenses liquid dishmachine detergent from any size bulk container through polyvinyl tube and discharges directly into wash tank. Integral solenoid water valve, responsive to electric controller, controls admission of a small flow of water to actuate feeder. Mounts readily to side of dishwasher.



Model 217 Liquid Feeder

Automatic liquid controller, timed and actuated by a small flow of water bled from final rinse line. Dispenses a pre-set quantity of liquid dishmachine detergent whenever fresh water is added to wash tank. Connects to bulk container through polyvinyl tube. Feed rate is adjustable for any machine and cycle.



TOO MUCH ZEAL

Is the accidental poisoning hazard by household chemical products as great as some overzealous supporters of regulatory legislation would have us believe? After hearing an address by R. Owen Carter before the Chemical Specialties Manufacturers Association recently, we concluded that exaggerated incidence figures for such poisonings have been used as far as the Hazardous Substances Labeling Act is concerned. About 65 per cent of all accidental poisoning cases fall in the category of medicines, pesticides, and cosmetics, all specifically excluded from the new law. The percentage of ingestion cases not regulated by the new act is actually higher than this because of excluded products in other categories.

Contrary to popular impression, the death rate from accidental poisoning has been decreasing for many years, dropping from 1.1 per 100,000 of population in 1948 to 0.8 in 1959. Over the years, poisoning ranked sixth in accidental deaths, among young children, representing only 4.8 per cent of deaths. In all age groups, poisoning was tenth for a percentage of 1.6 of all fatalities. These figures are startling when we view the accusing finger pointed at household chemicals as the killer of young children.

Maybe Mr. Carter's full analysis of the situation should be placed before interested members of Congress and regulatory officials as well. It is truly enlightening.

* * * * *

INEZ ROBB ON SOAP

Soap is the great leveler. Its social implications are tremendous. Over the years, it has done more for mankind "than the tinker who turned out the first wheel." Thus wrote Inez Robb, well-known newspaper columnist recently. She then went to work to take apart the unwashed, unkempt segment of our younger generation and give them a neat going over. But Mrs. Robb doesn't worry that these queers among our younger set herald man's return to the cave. She said "with good soap selling at noninflated prices." any such danger is unlikely.

What we liked best in Mrs. Robb's column was this reference to uninflated prices for soap. As an observing housewife, she undoubtedly discovered this on her own. But how many other women realize how little soap prices have advanced during the inflationary period of the past decade? We hope a lot, but we don't know. And the soap industry as such has never done much, if any, boasting on the subject. When we consider quality improvement in addition, holding down prices has been a remarkable achievement even though it has been mostly dictated by competition. Nevertheless, we want to doff our sombrero to Mrs. Robb for so neatly bringing out this vitally important point in her widely-read column.

* * * * *

DETERGENT USE

Soap and detergent consumption in the United States has risen to about 27 pounds per capita, says the Soap Association. Considering the rapid increase in population over the past decade or two, they point out that this is doubly reassuring. From 1948 until 1960, tonnage output of detergents and soaps rose 30 per cent. But a very significant observation ordinarily not given too much thought is the fact that a pound of industry product today of which 76 per cent of production is synthetic detergents is far more efficient in the washing operation than was a pound of industry product back in 1948 when 86 per cent of tonnage output was soap.

Some of our top men in the soap and detergent industry have expressed the opinion that we have reached a crest and that henceforth consumption per capita will flatten out. Without a statistic to back up our position, we disagree. Not only in the hinterland, but right in the heart of our big cities as well, there is much opportunity for increased use of soaps and detergents. With generally improved living conditions and education, we feel the trend is unmistakably toward greater cleanliness of body, clothing and premises. Granted that the days of the great unwashed masses in the U. S. are over, but there is still wide room for improvement in many areas which we feel must come. If we are around ten years hence, we may live to eat our words, but we honestly don't believe so right now.

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as the reader sees it...

Excellent Articles

Editor:

We read with interest the excellent articles by Messrs. Ayo, Bruun and Matchett covering the U. S. surfactant industry in the May and June issues of *Soap and Chemical Specialties.* We would appreciate receiving four reprints of these two articles if they are available.

C. W. Wolfe
Market Development Division
Phillips Petroleum Co.
Bartlesville, Okla.

Reprints of this article are being made and will be available shortly. Any other readers who would like reprints may have them by writing either the authors or SOAP. Ed.

—★—

Surprise . . . Shock

Editor:

Just a note to indicate my appreciation for the publicity in the June issue of *Soap and Chemical Specialties.* It was quite a surprise and possibly even a shock to see my picture staring at me.

J. C. Harris,
Manager, Applications Research,
Monsanto Research Corp.
Dayton, O.

It couldn't have happened to a nicer guy—who incidentally, has just received the new title shown, effective July 1. Ed.

—★—

RMA Address

Editor:

Would you be good enough to send us the address of the Rubber and Vinyl Flooring Council of the Rubber Manufacturers Association in New York, as per the article appearing on Page 166 of the June issue of *Soap and Chemical Specialties.*

M. Schwartz
Algonquin Chemicals, Ltd.
Montreal, Que., Canada

The Rubber Manufacturers Association is located at 444 Madison Avenue, New York 22, N. Y. Ed.

—★—

Thank You

Editor:

In the May issue of *Soap and Chemical Specialties* magazine we see that you featured our new product, the tamper-proof seal for aerosol cans.

We were quite pleased with the news coverage given to our product and wish to express our very sincere appreciation.

Warren Richards
Pharmaplastics, Inc.
Baltimore, Md.

—★—

Waxers Up TV Advertising

Polish and wax gross time billings on television rose from $10,827,315 in 1959 to $16,895,139 in 1960, an increase of 56 per cent, according to a recent report issued by the Television Bureau of Advertising, Inc., New York.

The leading advertiser in the floor and furniture polishes and waxes category in 1960 was S. C. Johnson & Son, Inc., Racine, Wis., with a total expenditure of $7,776,331. Of this figure, $5,329,901 was spent on network advertising, and $2,446,430 was spent on spot billings.

Simoniz Co., Chicago, was second, with a total expenditure of $4,381,827, and American Home Products Corp., New York, third, with a total outlay of $1,551,074.

—★—

New Pyrethrum Booklet

The 1961 edition of the African Pyrethrum Bulletin, distributed on behalf of the Pyrethrum Board of Kenya, is now available from Charles Hurd and Associates, 1725 Eye St., N.W., Washington, D. C. The 12 page booklet describes the uses, performance and efficiency of pyrethrum.

—★—

Arthur P. Locke Dies

Dr. Arthur Preston Locke, 63, retired industrial chemist, died recently at Bradenton, Fla. Dr. Locke was chief research chemist for Zonite Products Corp., from 1934 to 1945, and its director of research from 1945 until his retirement in 1954. Zonite is now Chemway Corp., in Wayne, N. J.

Robert E. Horsey, vice-president in charge of sales, Givaudan-Delawanna, Inc., New York, and president of the Essential Oil Association of USA, presents the President's Cup to Byron N. Thompson, International Flavors & Fragrances, Inc., New York, winner of the 10th annual EOA Golf Outing held June 8th, at the White Beeches Golf Club, Haworth, N. J.

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Use Procter & Gamble formulation assistance

ORVUS K LIQUID. A highly concentrated modified ammonium lauryl sulfate—formulated for increased sudsing and mildness. Exceptionally low cloud and pour points—highly fluid and easy to handle. Ideal for clear liquid shampoos, liquid bubble bath preparations, and liquid detergents when high foaming is required.

ORVUS AB GRANULES. A neutral synthetic detergent, wetting and emulsifying agent of the 40% active sodium alkyl aryl sulfonate type. A white spray-dried product that can be used effectively in the blending of bubble baths, car body shampoo, dishwashing compounds, dairy cleaners, insecticides, laundry detergents, rug and upholstery cleaners.

ORVUS WA PASTE. A neutral synthetic detergent and wetting agent whose active ingredient is mainly sodium lauryl sulfate. Excellent sudsing, wetting, dispersing and penetrating properties. Ideal for paste cream and liquid cream shampoos, bubble baths, liquid detergents, liquid floor cleaners, insecticides, glass cleaners, and especially effective for rug and upholstery cleaners.

AMBER GRANULES. A neutral 88%, 42°C. titer type soap of outstanding purity and uniformity. Well suited for the preparation of paste or gelled products because of its high titer. Its granular form makes it ideal for blending powdered products. Excellent for the compounding of hand cleaners, paste cleaners, polishes, and lubricants.

ORVUS ES PASTE. A specially developed synthetic detergent whose active ingredient is mainly modified sodium lauryl sulfate. Offers exceptional efficiency and stability over a wide range of operating conditions. Its excellent wetting, penetrating, sudsing, dispersing and emulsifying properties make it well suited for the preparation of liquid shampoos, bubble baths, liquid detergents, liquid floor cleaners, insecticides, car washes, emulsion cleaners.

KYRO EO. A neutral nonionic synthetic detergent of the 100% alkylphenol ethylene oxide condensate type. A clear light-colored liquid with a clean, pleasant odor. Its superior detergent, wetting and emulsifying properties offer excellent performance in liquid detergents, sanitizer-detergents, self-emulsifying solvents, laundry detergents, glass, textile, and dairy cleaners, insecticides, and bottle washing compounds.

IVORY BEADS. A medium titer, neutral spray-dried white soap of exceptional purity and quality. Well suited for compounding products where a mild but effective soap is required—hand soaps, polishes, protective creams, and dishwashing compounds.

Procter & Gamble products offer you a proven way to simplify your formulation problems and be confident of successful results. We invite your inquiry for further information and the opportunity to forward an Industrial Catalogue. Write to:

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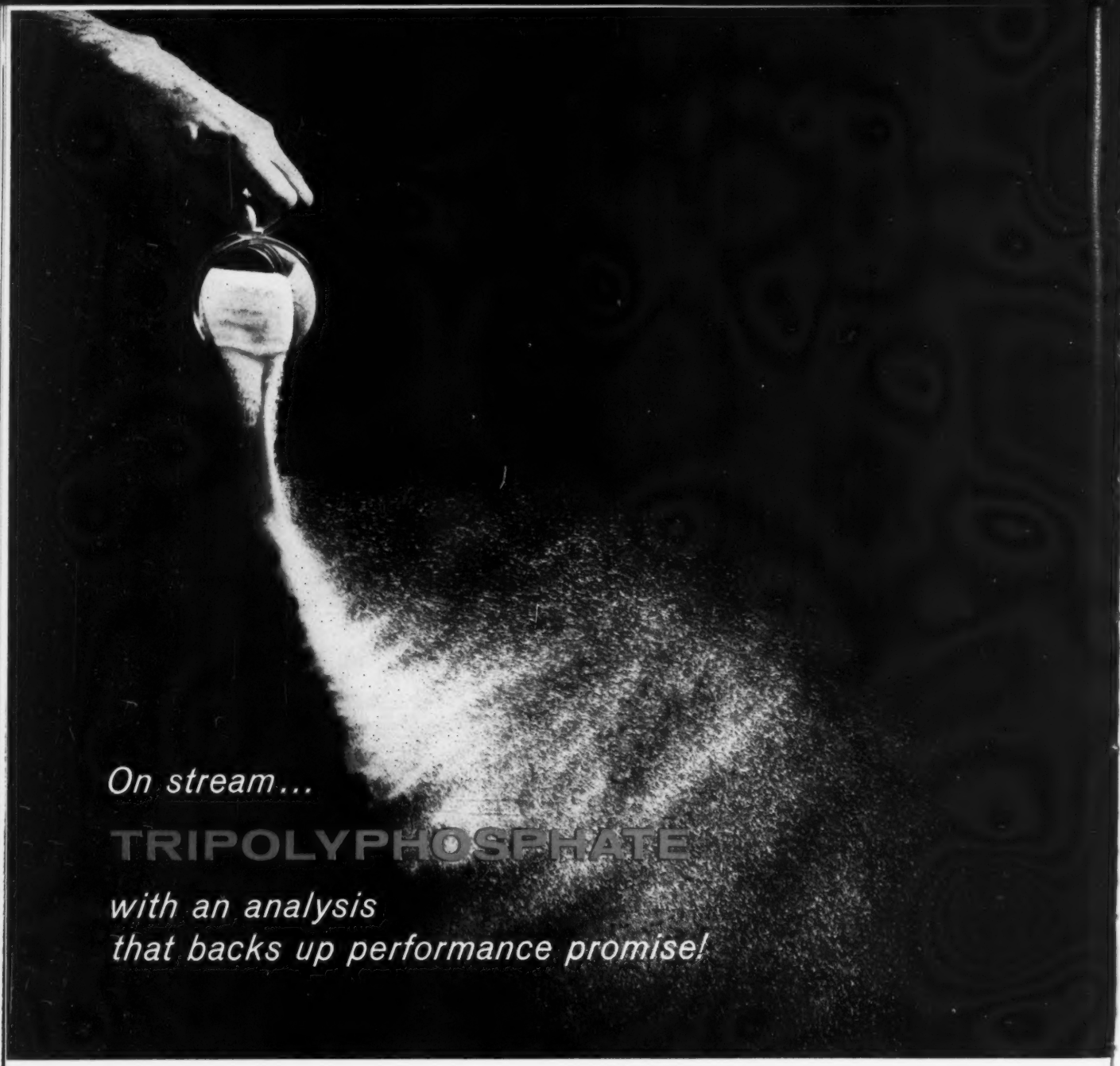
Shampoos
Shave products
Soap powders
Starch
Steam cleaners
Textile detergents
Toiletries
Toilet soaps
and other detergent
and soap products

Sidney Rudman, seated, secretary, discusses new "Glide" cleaner with Charles Hulnick, president of East Coast Soap Corp., Brooklyn. Firm this year celebrates its fortieth anniversary. From strictly a soap making operation the firm has successfully diversified into a wide range of detergents and floor products. See story on page 47.



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Neutralization of alkyl benzene sulphonic acid for manufacture of

Light Duty Liquid Detergents

By M. Gluckman
Chief Chemical Engineer
Kwikbrite (Pty) Ltd. S. Africa

FOR many years, alkyl benzene has been the major starting material for the production of general purpose synthetic detergents. The main reasons for the popularity of alkane being its relatively high performance coupled with extremely low comparative cost. Commercially, built synthetic detergents can be classified into two very broad fields, i.e. household detergents and industrial detergents. Formulation of the above two types of detergent materials must be based on relatively different principles. In formulating industrial detergents, the main considerations are ability to perform the required duty at the lowest possible cost to the consumer.

In the formulation of household detergents, apart from the above, there are other considerations to be taken into account; the most important being product appeal, i.e. if the product is labelled and advertised as a foaming detergent, it must have the ability to produce a copious initial volume of foam, this foam being stable over as wide a field as is practically possible.

In recent years, liquid detergents have taken over a large percentage of the household market, mainly in the light duty field. The major applications of a light duty (foaming) liquid detergent are:

1). Manual dishwashing
2). Washing of fine and delicate fabrics.
3). Washing of woolens, i.e. carpets, sweaters etc.

For these three operations, a copious and stable foam is desirable from the point of view of product appeal and product acceptance by the public.

One of the obvious raw material choices for a liquid detergent of the above description is sulphonated alkyl benzene, for its low cost; high performance and good foaming characteristics.

The first step is to decide on the most suitable base to neutralize the sulphonic acid. The first alkali that comes to mind is caustic soda. This alkali is most probably the best, single all purpose neutralizing agent, because of the low cost and excellent foaming characteristics of the final product.

Apart from caustic soda, there are four other common alkalis with which sulphonated alkyl benzene can be neutralized. They are:

Ammonia
Caustic potash
Triethanolamine
Morpholine

When considering these five neutralizing agents, the thought immediately comes to mind, that maybe one of the above might be more effective for certain operations than pure caustic soda; or maybe a mixture of certain of these alkalis might show characteristics lacking in the product neutralized with caustic soda only.

This article has been written with the view to studying the properties of alkyl benzene sulphonic acid neutralized with each of the above alkalis separately and with certain combinations of them.

Before proceeding, certain terms used in this article must be explained, i.e. Na will be used to denote the product neutralized with caustic soda; NH_3 will be used to denote the product neutralized with ammonia; K, the potassium neutralized product; Tr., the triethanolamine neutralized product, and Mor., the product neutralized with morpholine. The term $\frac{3}{4}Na/\frac{1}{4}NH_3$, means that of the total active matter present, $\frac{3}{4}$ (weight %) is the sodium sulphonate of

Table 1.

Active material	Cost/lb. of alkali Cents	Cost/lb. of active Cents	Relative cost/lb. of active. Cents
Na.	5.11	10.99	1.000
NH_3	10.75	11.08	1.010
K.	9.60	11.42	1.040
Tr.	20.50	14.06	1.280
Mor.	57.80	20.96	1.910
$\frac{3}{4}Na/\frac{1}{4}Tr.$	8.96	11.75	1.070
$\frac{1}{2}Na/\frac{1}{2}Tr.$	12.81	12.53	1.140
$\frac{1}{4}Na/\frac{3}{4}Tr.$	16.66	13.30	1.210
$\frac{3}{4}Na/\frac{1}{4}NH_3$	6.52	11.01	1.002
$\frac{1}{2}Na/\frac{1}{2}NH_3$	7.94	11.04	1.005
$\frac{1}{4}Na/\frac{3}{4}NH_3$	9.34	11.06	1.007
$\frac{3}{4}NH_3/\frac{1}{4}Tr.$	13.19	11.82	1.076
$\frac{1}{2}NH_3/\frac{1}{2}Tr.$	15.63	12.57	1.142
$\frac{1}{4}NH_3/\frac{3}{4}Tr.$	18.07	13.32	1.212

alkyl benzene, and ¼ (weight %) is the ammonium sulphonate of alkyl benzene, i.e. for a product containing a total of 10% active material, 7½% w/w would be the sodium salt, and 2½% w/w would be the ammonium salt of alkyl benzene sulphonic acid.

Before presenting any chemical or physical results, the basic and most important question of relative costs must be considered. Column two of Table 1. shows the cost in cents per pound of active material. This takes into account the cost of the alkyl benzene as well as that of the specific alkali used.

From Table 1 it can be seen that caustic soda is the cheapest neutralizing agent for alkyl benzene sulphonic acid. Also, the caustic neutralized product is the cheapest active material available.

On the other hand, however, there are a number of combinations which are almost as cheap as caustic soda, i.e., ammonia and all the combinations of caustic soda and ammonia. Cost-wise these are the most interesting alkalis, and therefore their properties will be thoroughly investigated.

Classifying Table 1 in order from cheapest to most expensive we get:

Classification No. 1.

1). Na.
2). ¾Na/¼NH_3
3). ½Na/½NH_3
4). ¼Na/¾NH_3
5). NH_3.
6). K.
7). ¾Na/¼Tr.
8). ¾NH_3/¼Tr.
9). ½Na/½Tr.
10). ½NH_3/½Tr.
11). ¼Na/¾Tr.
12). ¼NH_3/¾Tr.
13). Tr.
14). Mor.

Another very important property to be taken into consideration when formulating a liquid detergent, is the cloud point of the solution. The desirable cloud point depends on the climate of the area in which the product is to be marketed. The required cloud point can vary from about 5 degrees C. (for the warmer climates), to about −10 degrees C. (for the colder climates).

Obviously, the lower the cloud point of the active solution, the less solubilizing agent such as urea or alcohol will be required, and therefore the lower the cost of the final product. In other words, the lower the cloud point of the active material, the more economical it will be.

Table 2 lists the cloud points of a 6% active solution of alkyl benzene sulphonic acid neutralized with each of the above fourteen bases separately.

Once again classifying Table 2 in order from lowest to highest cloud point, we get:

Classification No. 2.

1). ¼Na/¾Tr.
2). ¼NH_3/¾Tr.
3). ½Na/½Tr.
4). ½NH_3/½Tr.
5). Tr.
6). ¾Na/¼Tr.
7). ¾Na/¼NH_3
8). Na.
9). ¾NH_3/¼Tr.
10). ½Na/½NH_3
11). ¼Na/¾NH_3
12). NH_3.
13). K.
14). Mor.

One very interesting fact emerges from Table 2. The cloud point of sodium alkyl benzene sulphonate is 14.0 degrees C., and the cloud point of ammonium alkyl benzene sulphonate is 41.5 degrees C. Therefore, the cloud points of any combinations of these two products should lie between the above two values. However, the cloud point of ¾ sodium alkyl benzene sulphonate/¼ ammonium alkyl benzene sulphonate is 9.0 degrees C., lower than either of the separate products. This seems to indicate a type of synergistic effect achieved by neutralizing alkyl benzene sulphonic acid with a mixture of certain alkalis. This might be indicative of something extremely interesting, and on further investigation, it proved to be just that.

A most important factor to be considered when formulating a liquid detergent, is the question of foam volume and foam stability. This is most important as far as product appeal is concerned. Also, in conjunction with anionic surface active agents *only*, foam volume is, to a certain extent, a measure of detergency.

The apparatus used for foam height investigations was a modified type of Ross-Miles apparatus. It was used instead of conventional equipment, because of its speed and because only comparative figures were required.

Table 2.

Neutralizing alkali	Cloud Point °C	Neutralizing alkali	Cloud Point °C	Neutralizing alkali	Cloud Point °C
Na.	14.0	¾Na/¼Tr.	5.0	¼Na/¾NH_3	35.0
NH_3.	41.5	½Na/½Tr.	>0.0	¾NH_3/¼Tr.	18.0
K.	42.0	¼Na/¾Tr.	>0.0	½NH_3/½Tr.	>0.0
Tr.	−2.0	¾Na/¼NH_3	9.0	¼NH_3/¾Tr.	>0.0
Mor.	70.0	½Na/½NH_3	19.0		

Figure A

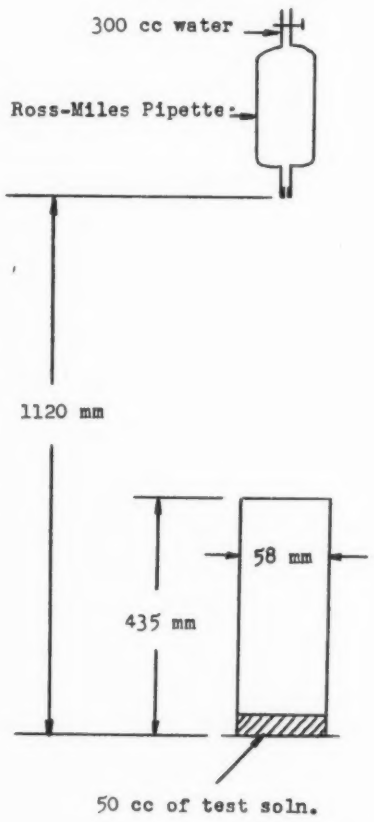


Table 3.

Neutralizing alkali	Initial foam ht. of a 0.07% active solution mms.	Foam ht. after ½ hr. of 0.07% solution mms.	Initial foam ht. of a 0.007% active solution mms.	Foam ht. after ½ hr. of 0.007% solution mms.	Foam ht. of 0.007% active in a 25/325 oil/water solution mms.
Na.	207	171	110	93	67
NH_3.	203	159	96	84	57
K.	209	158	92	75	53
Tr.	192	147	87	74	42
Mor.	171	141	86	70	43
¾Na/¼Tr.	205	165	94	78	56
½Na/½Tr.	205	162	94	77	57
¼Na/¾Tr.	188	150	84	74	46
¾Na/¼NH_3	213	171	104	90	70
½Na/½NH_3	209	158	102	86	61
¼Na/¾NH_3	198	153	92	80	57
¾NH_3/¼Tr.	202	157	86	73	51
½NH_3/½Tr.	196	160	87	68	47
¼NH_3/¾Tr.	182	150	83	72	45

This method gave exceptionally reproducible results and was found to be sufficient for the requirements. See Figure A. The tests were conducted in an air conditioned room with the temperature maintained at 25.6 degrees C. All of the water used was thermostatically maintained at 25.6 degrees C. Also, the water used for all of the foam tests, was hard water of 150 ppm. hardness.

The results of the foam tests are shown in Table 3.

The last column in Table 3 gives the relative dishwashing efficiencies of the 14 different products. The test was carried out as follows: Exactly the same procedure was followed as for the previous foam tests, the only difference being that the solution containing the active material, instead of being composed of 50cc. of active matter and water only, was made up of active material in 25 cc. of water together with 25cc. of Sunflower seed oil.

Before discussing Table 3., we will analyze it as before, classifying the 14 products in order, from greatest to lowest foam volume or foam stability.

This analysis shows some extremely interesting results. Firstly, and most obviously, it shows that sodium alkyl benzene sulphonate is among the best of the lot. Following on from this conclusion, however, is the somewhat startling fact that sodium alkyl benzene sulphonate is *not* the best. By merely glancing at all the table analyses, it can be seen that ¾ sodium alkyl benzene sulphonate/¼ ammonium alkyl benzene sulphonate slightly overshadows the pure sodium alkyl benzene sulphonate.

Secondly, Figures 1, 2, and 3 illustrate another very interesting feature of mixing the neutralizing agents for alkyl benzene sulphonic acid, i.e. they show that for certain proportions of the two neutralizing agents in question, the foam volumes, foam stabilities and dishwashing efficiencies of the mixed product are superior to those of either of the individually neutralized products. This is another example of the synergistic effect previously illustrated by the table of cloud points (Table 2.).

On the other hand, it can be seen that for certain other proportions of the same two neutralizing agents, the above properties mentioned are definitely inferior to those of either of the individually neutralized products.

At the present time, the author knows no feasible theoretical explanation for the above phenomena, but it is felt that an investigation of the above facts, with the view to a theoretical explanation, might prove to be of value in the advancement of knowledge in the field of surface chemistry in general and detergency in particular.

***Classification No. 3.* (Initial foam ht. of a 0.07% active solution).**

1). ¾Na/¼NH_3	5). ¾Na/¼Tr.	9). ¼Na/¾NH_3	13). ¼NH_3/¾Tr.
2). ½Na/½NH_3	5). ½Na/½Tr.	10). ½NH_3/½Tr.	14). Mor.
2). K.	7). NH_3	11). Tr.	
4). Na.	8). ¾NH_3/¼Tr.	12). ¼Na/¾Tr.	

***Classification No. 4.* (Foam ht. after ½ hr. of a 0.07% active solution).**

1). ¾Na/¼NH_3	5). ½NH_3/½Tr.	9). ¾NH_3/¼Tr.	13). Tr.
1). Na.	6). NH_3	10). ¼Na/¾NH_3	14). Mor.
3). ¾Na/¼Tr.	7). K.	11). ¼Na/¾Tr.	
4). ½Na/½Tr.	7). ½Na/½NH_3	11). ¼NH_3/¾Tr.	

***Classification No. 5.* (Initial foam ht. of a 0.007% active solution).**

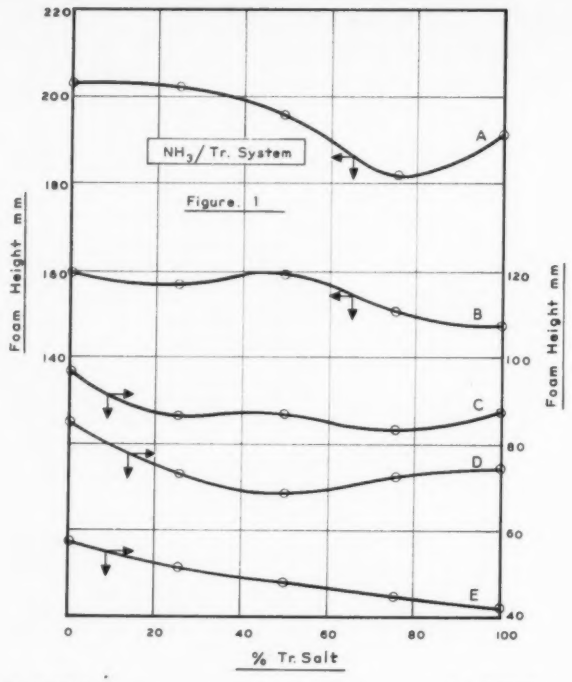
1). Na.	5). ¾NH_3/¼Tr.	9). Tr.	13). ¼Na/¾Tr.
2). ¾Na/¼NH_3	5). ½Na/½Tr.	9). ½NH_3/½Tr.	14). ¼NH_3/¾Tr.
3). ½Na/½NH_3	7). K.	11). ¾NH_3/¼Tr.	
4). NH_3	7). ¼Na/¾NH_3	11). Mor.	

***Classification No. 6.* (Foam ht. after ½ hr. of a 0.007% active solution).**

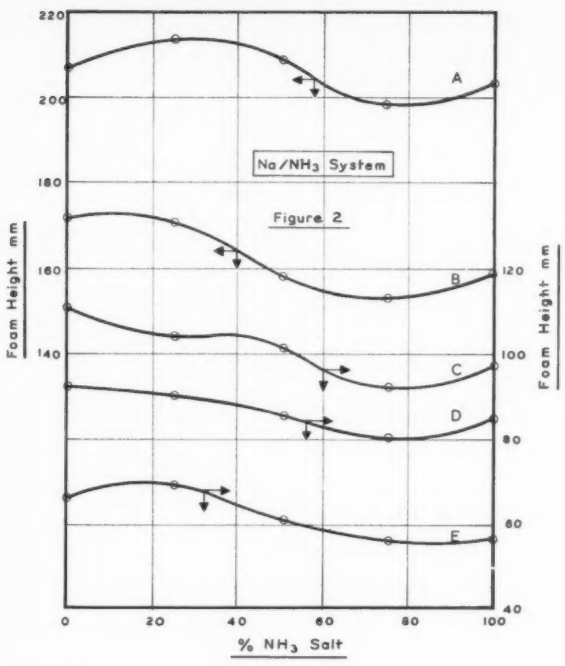
1). Na.	5). ¼Na/¾NH_3	9). Tr.	13). Mor.
2). ¾Na/¼NH_3	6). ¾Na/¼Tr.	9). ¼Na/¾Tr.	14). ½NH_3/½Tr.
3). ½Na/½NH_3	7). ½Na/½Tr.	11). ¾NH_3/¼Tr.	
4). NH_3	8). K.	12). ¼NH_3/¾Tr.	

***Classification No. 7.* (Foam ht. of a 0.007% active soln. in 25 325 oil/water solution).**

1). ¾Na/¼NH_3	4). ½Na/½Tr.	9). ¾NH_3/¼Tr.	13). Mor.
2). Na.	4). ¼Na/¾NH_3	10). ½NH_3/½Tr.	14). Tr.
3). ½Na/½NH_3	7). ¾Na/¼Tr.	11). ¼Na/¾Tr.	
4). NH_3	8). K.	12). ¼NH_3/¾Tr.	

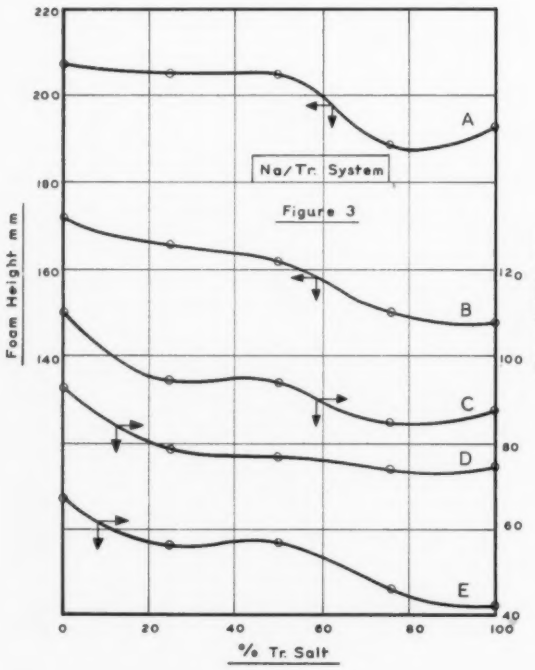


A—Initial foam height of a 0.07% active solution.
B—Foam height after ½ hour of a 0.07% active solution.
C—Initial foam height of a 0.007% active solution.
D—Foam height after ½ hour of a 0.007% active solution.
E—Foam height of a 0.007% active solution in a 25/325 oil/water mix.



A—Initial foam height of a 0.07% active solution.
B—Foam height after ½ hour of a 0.07% active solution.
C—Initial foam height of a 0.007% active solution.
D—Foam height after ½ hour of a 0.007% active solution.
E—Foam height of a 0.007% active solution in a 25/325 oil/water mix.

Another feature of interest revealed in Table 3. and Figures 1, 2 and 3 is the fact that alkyl benzene sulphonic acid neutralized with triethanolamine cannot compare as a detergent-active material with alkyl benzene sulphonic acid neutralized with caustic soda, ammonia, caustic potash or a vast majority of the mixtures of neutralizing agents. It is slightly better than alkyl benzene sulphonic acid neutralized with morpholine, which is a very poor detergent indeed.



A—Initial foam height of a 0.07% active solution. mm.
B—Foam height after ½ hour of a 0.07% active solution.
C—Initial foam height of a 0.007% active solution.
D—Foam height after ½ hour of a 0.007% active solution.
E—Foam height of a 0.007% active solution in a 25/325 oil/water mixture.

Triethanolamine (apart from morpholine), is also by far the most expensive neutralizing agent of the lot. The cost of the product made by neutralizing alkyl benzene sulphonic acid with triethanolamine is 28 per cent more expensive than alkyl benzene sulphonic acid neutralized with caustic soda.

Therefore, the only advantage in neutralizing alkyl benzene sulphonic acid with triethanolamine is that a clear solution can be obtained at virtually any active concentration, whereas with any of the other products, at most concentrations, solubilizing agents must be used. It is obvious, however, that for a liquid detergent, it would be much more advantageous and economical to neutralize with one of the better neutralizing

(*Turn to Page* 99)

Small Soaper Diversifies; Switches to Specialties

40-Year-Old East Coast Soap Corporation Boosts Profits by Broadening Product Line

HAVING produced 200 million pounds of soap during its 40 years in business, East Coast Soap Corporation, 89 Coffey St., Brooklyn, N. Y. has successfully diversified its line to include detergents, mechanical and hand dishwashing compounds, disinfectants, floor waxes and floor finishes. As East Coast celebrates its 40th anniversary in 1961, it has further plans for additional products.

Founded in 1921 by Walter Tisch, the company's original plant comprised approximately 3000 square feet of floor space on 9th Street between Smith and Court Streets in downtown Brooklyn. Here, with the assistance of four employees, Mr. Tisch commenced manufacturing soap powder for bulk packaging. The finished product was packaged in 200 pound wooden drums for distribution in the metropolitan area of New York City. Total sales for the first year amounted to $35,000.

By 1926, East Coast was large enough to seek a new home and its first expansion found it relocated in a single factory building at 100 Van Dyke Street. This new location provided the firm with a floor area of 10,000 square feet. While East Coast is still at the same location, its address was changed to the Coffey Street number in 1948 when, during a further expansion program, the plant pushed through to the next street. At this time, the general offices were relocated on Coffey St. During the various expansions of the firm, five different buildings have been acquired.

In 1924, Charles Hulnick, now president of the firm, joined the East Coast operation as a one-man office force. He was the first non-manufacturing employee hired by the growing concern. In 1932, Sidney Rudman, now secretary of the corporation, joined the operation to form a two-man office force.

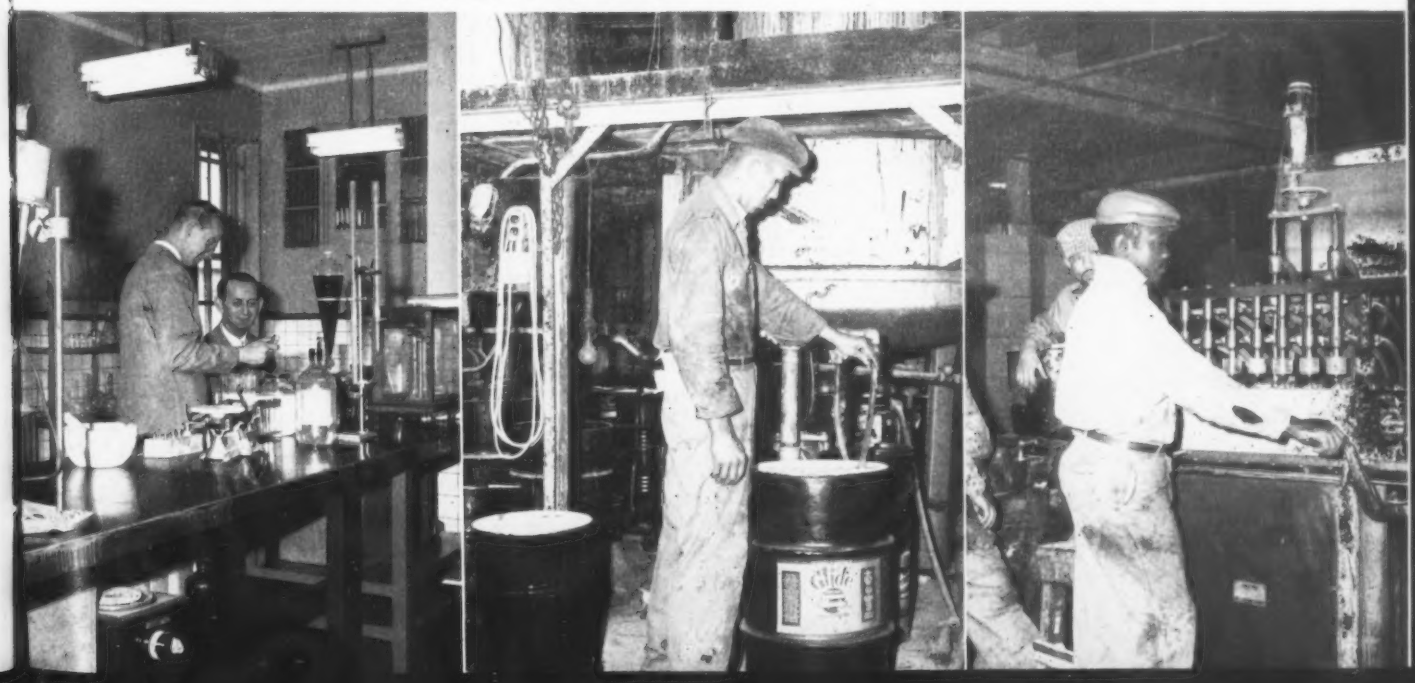
In 1935, packaging innovations caused the firm to switch to a considerable degree from wooden barrels to multi-wall bags and the firm commenced packaging their soap powder in 100 pound bags.

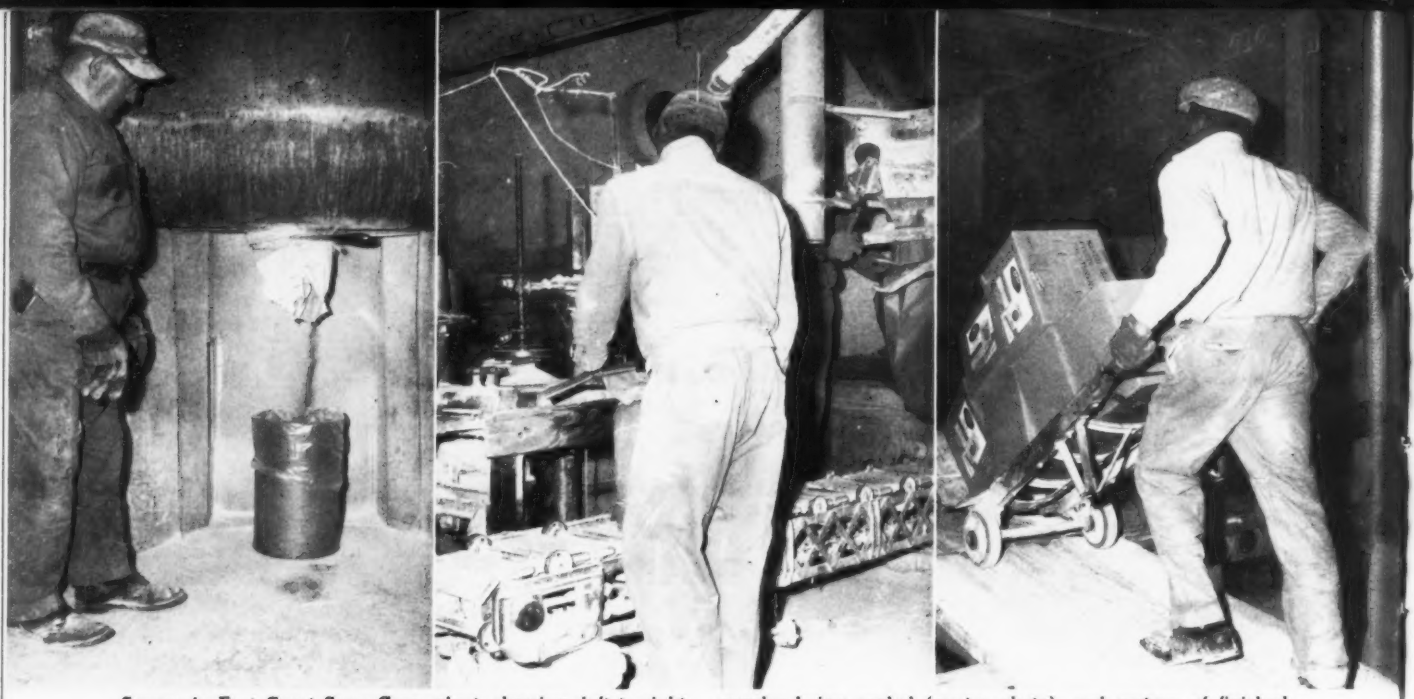
In 1952, Mr. Hulnick and Mr. Rudman took over full control of East Coast Soap and commenced a diversification program. At this time, the bulk of the firm's business was in soap powder sales. However, with the new owners in control, a research program was started on liquid detergents and, after two years, the firm introduced "E-Z Suds" in 1954. This liquid detergent was marketed in containers ranging from one gallon cans to 55-gallon drums.

By 1958, the firm had undergone further diversification and introduced floor waxes and floor finishes for the industrial distributor. The latest additions to the line of East Coast products are "Glide" cleaner and "Top Gloss" floor finish.

East Coast sells only through industrial distributors and does not sell direct to the consumer. Sales have been expanded from the metropolitan New York area to in-

Recently completed laboratory, left, is under direction of John Molle, standing, and Eugene Ickovic. New and expanded laboratory facilities will allow for greatly broadened program of research, especially in development of new products. 30-gallon drum of "Glide" floor cleaner is being filled directly from mixing tank in center photo. Gallon cans of "Glide" are being filled on nine-spout MRM filling machine, right. Plant operations of East Coast Soap Corp. are under the direction of Sy Mauro, who is plant superintendent for the firm.





Scenes in East Coast Soap Corp. plant, showing, left to right, workman filling drum of dishwashing compound. Sacks of soap powder being sealed (center photo), and cartons of finished products being wheeled into truck for shipment.

clude 24 states including Alaska. Some material is packaged under private label for individual firms, but a considerable quantity is sold to the industrial distributor under East Coast branded names.

Today, East Coast occupies five buildings with total plant space of 54,000 square feet, employing 40 people in plant operations, six office personnel, two full-time chemists and six outside salesmen.

Among the equipment used in the manufacture of the East Coast line are 10 tanks with a combined capacity of 150,000 pounds and ranging in size from 1,000 pounds to 30,000 pounds capacity. The manufacturing operations call for both dry and liquid mixers, and a dry mixer with a capacity of 4,000 pounds is used in blending the dry products. The plant has a specially heated area for its two liquid filling lines. Three powder filling lines are in constant operation to fill the different products manufactured by the firm. Dollar volume of the materials manufactured is about equal between dry and liquid products.

Shown in East Coast Soap office are, l. to r.: Miss Riki Agnes, bookkeeper; plant superintendent, Sy Mauro, and S. Horowitz, shipping clerk. Lower photo is partial view of East Coast Soap plant on Coffey St.

Sales during 1960 were well in excess of a million dollars and have increased 150% since the diversification program was begun in 1952. Mr. Rudman stated that this growth has come about for two reasons — (1) the industrial sanitary supply distributor is the only outlet for East Coast products and (2) the distributor is offered only high quality branded items. The firm has been active in field work among doctors, institutions, hospitals and others to check the end use results of their expanding line.

Only a few weeks ago, a new laboratory was completed by the firm. Under the direction of John Molle and Eugene Ickovic, the new laboratory facilities will allow for a greatly broadened scope of research in the development of new products. Plant operations are under the direction of Sy Mauro, plant superintendent.

(*Turn to Page* 98)

Factors Relating to

Accidental Ingestion Hazard

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Product Development Division,
Procter & Gamble Co.,
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THREE important aspects of the problem involving the accidental ingestion of household products will be considered in this discussion.

First, the available statistical information will be reviewed in order to evaluate the magnitude of the problem and correct some mistaken impressions that have arisen due to inaccurate use of the statistical data. Secondly, the matter of estimating ingestion hazard of individual products will be discussed, and the relatively large number of toxicological and other factors that must be taken into account in such an evaluation will be described. Particular attention will be devoted to the experimental determination of acute oral toxicity values. Finally, the need for consumer education and means by which industry can assist in reducing both numbers and consequences of accidental ingestion of products in the home will be discussed.

With a few exceptions, such as lead poisoning of children from eating old flaking paint, accidental poisonings involving non-gaseous substances are acute in nature; in other words, they result from ingestion of a single harmful quantity. It is with this acute type of ingestion involving household products that were unregulated prior to enactment of the Federal Hazardous Substances Labeling Act, and with the assessment of the hazard associated with such ingestions that this discussion deals.

* Paper presented during 47th midyear meeting, Chemical Specialties Manufacturers Assn., Chicago, May 17, 1961.

Magnitude of Problem

Some over-zealous supporters of legislation to regulate household products have used exaggerated incidence figures for accidental poisonings. An example of such exaggeration even appeared in testimony given before the Senate Committee that was considering the Hazardous Substances Labeling Bill (1).

Two types of reliable incidence data are helpful in assessing the magnitude of the problem. One is that accumulated by poison control centers and relates to frequency of ingestion; the other is from the National Office of Vital Statistics and relates to accidental deaths as recorded on death certificates. These two types of data will be considered in order.

Terminology Used in Reporting Statistics: Before looking at the poison control center data, a few remarks about terminology used in reporting this information seem warranted. In many published tabulations of poison control center data and in references to them, the incidents have been described as cases of poisoning, although they actually represented all cases of ingestion reported to the center, including telephone calls for information about ingested products. The products involved were not necessarily of truly hazardous nature, and the ingestions themselves may not have been of consequence. A poisoning to most people means a serious, even life-threatening case of systemic chemical injury. In any event, for a poisoning to have occurred it is necessary that some sort of adverse sign or symptom result, unless circumvented by prompt prophylactic measures. Cases that receive no treatment and yet are without symptoms do not meet the criteria of a poisoning. Uncomplicated, non-protracted vomiting following ingestion of a substance is likewise not adequate justification to classify the incident as a poisoning. Vomiting occurs readily in young children when strange and unaccustomed materials are ingested, as every parent knows. One of the writers still shudders to recall the catastrophe that resulted at dinner one evening when he insisted that his three-year-old youngster swallow his first mouthful of boiled okra.

The phrase "accidental poisoning" is used erroneously when applied to all accidental ingestions whether or not poisoning occurs. The term "accidental ingestion," adopted by the National Clearinghouse for Poison Control Centers, is much more precise and is to be

Available ingestion and death statistics show safety record of household products brought under regulation by Hazardous Substances Labeling Act for first time is quite a good one.

recommended for use by all people reporting or quoting such incidence data. There is another semantic problem that bothers the soap and detergent industry. Occasionally, the term "detergent" is used in the broad generic sense to include everything that cleans. Materials in this sort of category can range from lye on the one extreme to mild household washing products and even toilet soap on the other. Confusion arises because the word detergent in common usage has come to mean synthetic detergents, the non-soap household laundry and dishwashing products in everyday use. This confusion of meaning has resulted on occasion in household washing products being mistakenly blamed for injuries actually caused by lye.

Ingestion Incidence Data—National Clearinghouse for Poison Control Centers: The National Clearinghouse, which compiles reports submitted by a large number of individual centers around the country, has what are undoubtedly the most broadly-based statistics available regarding incidence of accidental ingestion. Approximately 90% of all their cases involve children under the age of five years (2). Figure 1 is based on their tabulation of such cases for the two-year period 1958-59 (3). The list of individual items ingested includes practically every material that can be found in or around the home. Medicines constitute by far the major class and account for approximately half of all reported cases. The next largest group of products is the Cleaning and Polishing Agents, followed in decreasing order of frequency by Pesticides; Petroleum Products; Cosmetics; and Turpentine, Paints, Etc.; and, finally, Plants. Those categories of substances that are either not regulated by the new Act or are specifically excluded from it are referred to as non-"household" products in Figure I. They are: Medicines, Pesticides, Cosmetics, and Plants; together they account for approximately 65% of all cases. The percentage

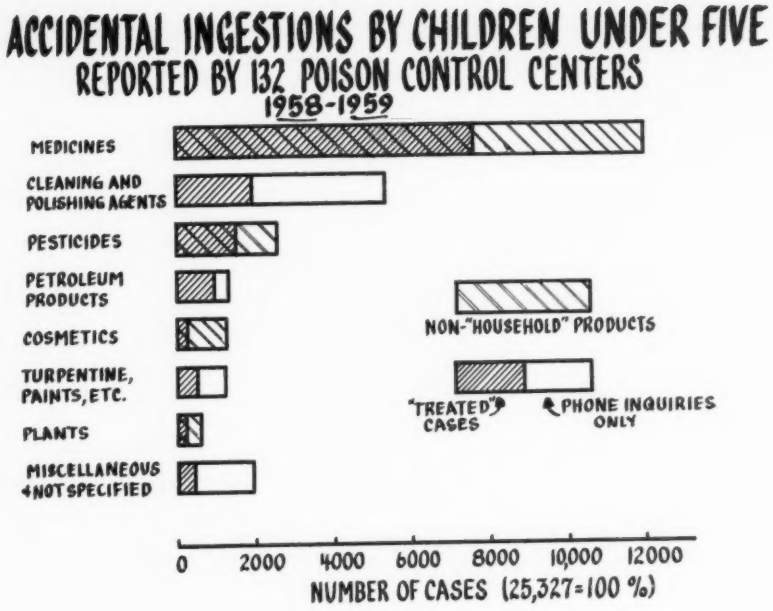


Figure 1.

of ingestion cases due to products not regulated by the new Act is actually considerably higher than this figure because a number of products not covered by the Act are included in the other categories.

The Clearinghouse identifies its cases as either "treated cases" or telephone calls, and this breakdown is indicated on the bars of the graph by shading. By "treated cases" is meant those that were seen at a poison control center; they did not necessarily receive any medical management. Telephone calls were simply requests to a center for information about an ingestion and may have been from either a physician or a lay person. The fraction of "treated" cases was highest for petroleum products (approximately 75%) and lowest for cosmetics (approximately 23%). It probably should be mentioned that the ratios of "treated cases" to telephone calls do not necessarily reflect degree of severity of the accidents, but they do give some indication of the relative concern with which the various materials were viewed.

The Clearinghouse has supplied the writers with symptom data for the cases involving soaps, detergents, and cleaners; bleaches; or furniture polishes (4), which are included in the Cleaning and Polishing Agents category of Figure 1. The incidences of symptoms in ingestions involving the products are given in Table I. The second column of the table shows the percentages of the total ingestions for which the three groups of products were responsible; the third column shows the percentages of ingestions involving each in which one or more symptoms were reported. The most frequently occurring symptom with all three types of products was spontaneous vomiting. Overall incidence of symptoms for all cases of ingestion has been reported to be approximately 30% (5).

In this connection, our ex-

Table I.
Ingestions of Selected Cleaning and Polishing Agents by Children under 5 1958-59[a]

Material	Percentage of Total Ingestions[b]	Percentage Showing Symptoms
Soaps, detergents, and cleaners	4.7	28
Bleaches	3.5	49
Furniture Polishes	2.5	42

[a] National Clearinghouse for Poison Control Centers. Unpublished data.

[b] Based on total of 25,327 ingestions reported by 132 Poison Control Centers.

perience with ingestions involving our own soap and detergent brands is pertinent. Follow-up contacts that we make with doctors or poison control centers confirm long experience that the products are not hazardous. Frequently, no symptoms result; those that do are temporary in duration and are usually limited to vomiting, a reflection of the good emetic properties of soaps and detergents.

Mortality Data — National Office of Vital Statistics: Contrary to popular impression, the death rate per 100,000 population from accidental poisoning by all non-gaseous substances has been decreasing for many years and at the present time is quite low. From 1949 to 1959 it decreased from 1.1 to 0.8 deaths per 100,000 population (6).

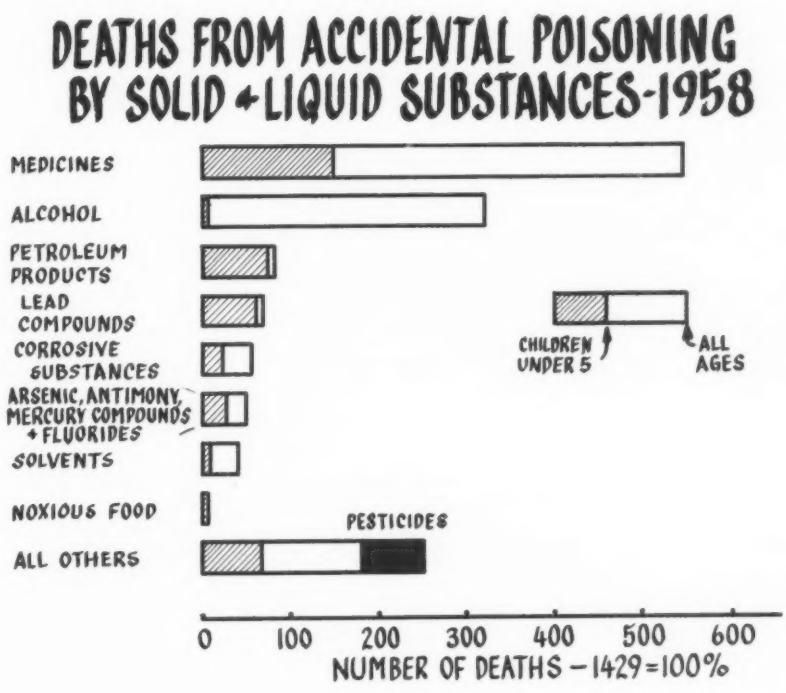
How does accidental poisoning from solids and liquids fit into the total accidental death picture? During 1958 there was a total of almost 91,000 deaths from all types of accidents; approximately 9,000 of them were among children below five years of age (7). Poisoning from solid and liquid substances ranked sixth in order of decreasing importance among causes of accidental death of the young children, causing 422 deaths which represented 4.8% of the total accidental deaths in the group. For the all-age group it ranked tenth, accounting for 1429 deaths representing 1.6% of all accident fatalities.

Figure 2 shows the relative numbers of deaths by categories of materials responsible. The below-five-year-old group is represented by the shaded portion of the bars on the graph. Medicines are shown again to be the most important type of material involved in both groups. Alcohol ranked a strong second for the total group; petroleum products and lead compounds ranked second and third for the young children. Incidentally, the segment at the right end of the All Others bar shows the deaths from pesticides included in this category; it is based on unpublished data supplied by the Office of Vital Statistics (8).

Those categories of materials that are not regulated by the new Act, plus the corrosive substances which were covered previously, were responsible for about 56% of the total accidental poisoning death toll, and for about 63% of the deaths in the below-five age group. These percentage figures would be increased materially by the products not covered by the Act that are included in the other categories. It has been estimated that the group of products brought under regulation by the new Act for the first time is responsible for not over 16% of the total of accidental poisoning deaths due to solids and liquids (9).

It is evident that the safety record of the heretofore unregulated household products is a relatively good one, especially considering the very large number of these products present in the home and available to young children. The relatively small magnitude of the ingestion problem involving them speaks well for the care that has been exercised by industry in the testing, formulation, and labeling of products for safety.

Figure 2



Hazard Assessment

Rational judgments regarding safety of a product and its need for a warning label must stem from an assessment of its hazard. Human experience, when available, is by far the best criterion for such an assessment. When relevant human experience does not exist, no simple test or measurement will suffice. The assessment must be made by qualified persons who weigh the inherent toxicological and physical properties of the material and the many factors that determine the degree of exposure to which people can reasonably be expected to be subjected.

The distinction between hazard and toxicity must always be kept clearly in mind. Toxicity is the inherent capacity of a substance to produce chemical injury when introduced into the body; hazard is the likelihood that significant injury will result in the practical exposure situation. Both hazard and toxicity are matters of degree. No material is completely non-toxic nor strictly non-hazardous. Water itself is sufficiently

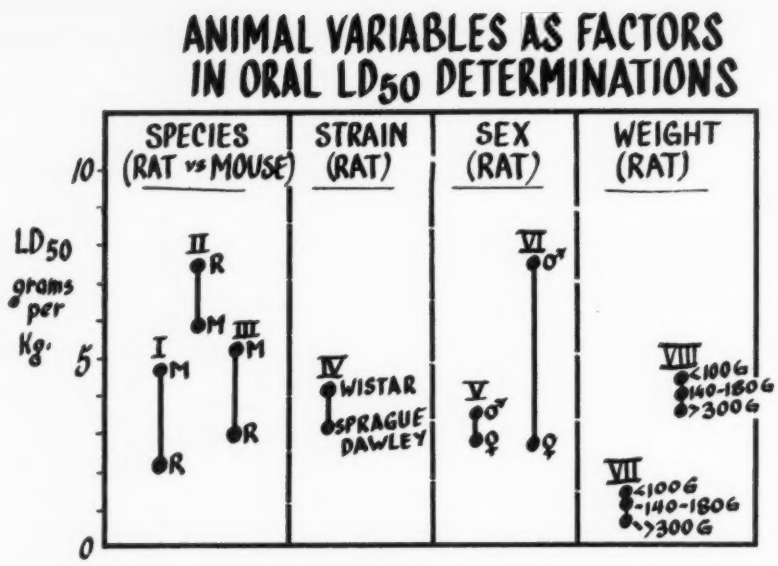


Figure 3

toxic that water intoxication is known (10), and table salt (sodium chloride) is classified as "moderately toxic" on the basis of animal tests.

Obviously, both toxicity and hazard may be so slight in particular cases as to be practically negligible. A realistic decision regarding whether a product is to be labeled should be made on the basis of whether it is hazardous to a practical degree. Such a decision needs to be considered very carefully. In instances of reasonable doubt regarding safety, both moral and legal reasons dictate that the decision be made in favor of labeling. However, unwarranted labeling of products that are not truly hazardous is against the public interest because it will contribute to making precautionary labels commonplace and tend to foster consumer disregard of all label warnings.

Acute Oral Toxicity and Factors Affecting Its Measurement: The most commonly employed and generally useful toxicological measurement in ingestion hazard assessment is the determination of the size of the single dose that produces death when administered orally to small animals. Results are usually reported as the calculated amounts required to kill 50% of the animals in the test group and are expressed as weight or volume of material per kilogram of body weight of test animal. This value is referred to as the LD_{50}.

Aside from the obvious problem of extrapolating from animal data to human experience, the acute oral toxicity test is fraught with variables that can have major influences on the values obtained. Some of the more important ones are listed in Table II. Those that are animal variables *per se* are in the left-hand column; those associated with the experimental and environmenal conditions are in the column on the right.

Because of the obvious need to learn how much experimental factors can affect results of LD_{50} tests with products of interest to us, an investigation of some of them has been undertaken in our laboratories. Details of this study will be reported elsewhere. Examples of the effects of four animal variables are shown on Figure 3. The left-hand panel of the figure compares acute oral toxicity results obtained using rats with those using mice for three different washing product formulations, indicated by Roman numerals I, II, and III. With materials I and III, rats gave materially lower LD_{50} values than mice, but the reverse was true with the third substance. It is, of course, well known that species differences can occur in acute toxicity work; these results are presented to show how variable the effect can be within a product class.

The second panel shows the results of simultaneous LD_{50} determinations on a washing product formulation using two common laboratory strains of albino rats. Other conditions were the same. This observed difference due to strain is statistically significant. The two LD_{50} values differ by approximately one-third.

The third panel shows the effect of sex of the test rats with two materials V and VI which were an anionic surfactant and a perfume ingredient, respectively. In both instances, the female gave a considerably lower LD_{50} than the male. The final panel presents results of LD_{50} determination using rats of three different weight ranges with an anionic surfactant (VII) and a washing product formulation (VIII). The larger and older rats were the more susceptible in both cases and gave the lower values.

It is the usual practice to withhold food from test animals for some hours (usually overnight) prior to dosing, because presence of food in the stomach may affect absorption and thereby alter ap-

(*Turn to Page* 162)

Table II.
Factors Influencing Acute Toxicity Determinations

Animal Variables	Condition Variables
Species	Vehicle
Strain	Concentration
Sex	Environmental
Body weight	Temperature
Age	
Nutritional state	

Forces in Detergency

Part III

By J. C. Harris*,
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As surfactant solution concentration is increased, the cmc is attained, and at sufficiently increased concentration, actual changes in phase then follow. However, most detergent operations are performed at concentrations at or above cmc, and data developed in this region should be the most pertinent.

The simplest form of the change from surfactant molecules to micelles is the equilibrium

surfactant molecule in solution $\rightleftharpoons$ surfactant molecule in micelle

While this implies simplicity of operation, the formation of micelles may be relatively complicated. Stainsby and Alexander (88) suggested that in going from the solid, to single ions, to micelles, the process may be subdivided. Phillips (75) also suggested several intermediate forms leading to the micelle, with varying energies for each. Electrical and cohesive energies were also recorded at micelle formation (85).

Stainsby and Alexander (88) discussed the several factors effective in $\triangle H^1s$ which was described as the true thermodynamic value of the change in heat content for aggregation of surfactant molecules. Included were interfacial energy (approximately 59 ergs/cm^2); various forms of internal rotation, libration and vibration of the long-chain ion; translational and rotational energy (each 3/2kT) for both the long-chain and gegen-ions; ion electrical energy in the micellar state which may be quite small (up to 1.3 kcal/mole). An example of these factors was given for solutions of cetyl pyridinium chloride:

$$\triangle H^1s = H_f - H_i = \gamma^1 \ (A_f - A_i) + (L_f - L_i) + E - 5/2\ kT \quad (9)$$

Table V. Heat and Entropy of Micelle Formation

Surfactant Sodium Alkyl Sulfate (c/c in Alkyl Chain)	ΔH_M (kcal/mole) Heat Micelle Formation	ΔS_M Entropy (cal/mole/degree)	Temp. C	NaCl Molarity	Ref.
8	0.2		25	—	35
	—1.0		50	—	35
	0.8		25	—	36
	0.3		25	0.6941	36
10	—0.21		25	—	52
	—0.288		25	0.1	52
	0.1		25	—	35
	—1.5		50	—	35
	—0.21	0.70	25	—	51
	+0.5		25	—	36
12	—0.4	—1.3 (0.01 M NaCl)	20-40	—	68
	0.1		25	—	34
	0.6		25	—	28
	—1.9		45	—	28
		—3.1 erg/cm^2 °C	31	—	82
	—1.0		25-35	—	88
	—1.8		35-45	—	88
	0 to —0.25		27	—	37

where γ^1 $(A_f - A_i)$ was the difference between the total interfacial energy and the interfacial energy per molecule in the micelle; L_f and L_i were respectively the internal energy per molecule consisting of rotation, libration and vibration, and L_i was the internal energy of the micelle per molecule and $L_f/-L_i$; E was the electrical energy of the ions in the micellar state; the residual term resulting from the derivation of the equation (for which the original paper should be studied).

For the immediate purpose, only the change in the heat of micelle formation $\triangle H_M$ (following the convention that M denotes the micellar state) and $\triangle S_M$ the change in entropy of the micelle are recorded. Table V lists these values for a number of surfactants. It is hardly surprising that varying values were found, in view of the various experimental procedures and methods for calculation used. It becomes quite apparent that $\triangle H_M$ is relatively low, and if, as has been suggested, the micellar state is a lower energy form, this must indeed be of low magnitude if the molar species is to become readily available for surfactant usage.

Variation in the heat of micellization by different investigators may be explained by two occurrences: $\triangle H_M$ changes with temperature, being more negative with temperature increase (28, 35), while concentration of surfactant can have marked effect upon this value (82).

The energy change at critical micelle concentration per $-CH_2-$ group of surfactant molecules has been developed from a number of measurements which have given rather good agreement. Procedures involved the measurement of the heat of solubility of hydrocarbon in water (48), measurements of heat of micellization of soaps (84), cmc measurements (56), heat of adsorption (65), heat

of solution (51), and calculation from the molar heat of vaporization (56).

Just as $\triangle H_M$ may be comprised of a number of individual bits of energy attributable to measurable factors, so the energy change per $-CH_2-$ unit may also be subdivided. The nonelectric part ($W\text{-}T\triangle S_o$) at the energy change during micellization applicable to the $-CH_2-$ group was calculated as 1 kT (72). Values for energy change per CH_2 group appear in Table VI.

The energy gain per CF_2 group was calculated (56): It amounted to 2 kT or 1240 cal/mole, agreeing reasonably well with the adsorption energy of a CF_2 group at the air/water interface (ca. 1470 cal/mole).

The free energy of micelle formation is more accurately pinpointed by the term standard free energy for micelle formation per micelle, $-\triangle F°_C/n$, where n is the number of monomer units in the micelle. The value for sodium lauryl sulfate found by Hoyer (50) was 6.1n kcal/micelle, compared with Phillips' (75) value of 9.6 kcal, derived using somewhat different assumptions.

Table VI. Energy Change at cmc Per $-CH_2-$ Group

kT	Reference
1.08	84
2.08	56
1.37	56 (by Phillips equation)
*2.08	48
1.51	51
1.08-1.19	65
1.2	75
1.36	20
2.14	22
*1.18	22

*by API molar heat of vaporization.

Summary

Since the effectiveness of the detergent operation is at a near maximum in the neighborhood of the cmc, correction must be made for heat of micellization ($\triangle H_M$). In the "true" heat of aggregation, due consideration must be given to interfacial energy; various forms of internal rotation, libration and vibration of the long-chain ion; translational and rotational energy of both long-chain and gegen-ions; and ion micellar electrical energy.

Varying $\triangle H_M$ values were noted for a variety of surfactants. However, generally $\triangle H_M$ changes with temperature (more negative with temperature increase), though surfactant concentration may have marked effect upon this value. $\triangle H_M$ per $-CH_2-$ group lies in a range between 1.08 to 2.14 kT, depending upon the method of estimation used, the lower value apparently being favored.

A more precise estimate of the free energy of micellization considers the number of monomer units n, per micelle, expressed as $-\triangle F°_C/n$, which was 6.1n kcal/micelle for sodium lauryl sulfate.

Heat of Adsorption

When a solid is immersed in a solution, the total heat evolved is comprised of wetting and adsorption components, or if the cmc is approached, the additional heat of micellization. Heat of adsorption is this total heat, less the heat of wetting induced by the pure solvent and the heat of micellization.

Since van der Waals forces have heats of adsorption usually less than 4000 cal/mole, and chemisorption at least 10,000 and generally more, the effect of temperature on van der Waals forces should be the more marked. Chemisorption frequently is reversible only with difficulty.

The heat evolved in the course of adsorption may vary considerably from that induced by the initial small amounts of adsorbate, becoming much smaller as saturation of the adsorbent surface increases (1). In many cases, offgassing (or even conditioning) of the adsorbent may be disregarded. However, since a film ranging from a fraction to several monolayers of water may exist on the proposed adsorbent surface, this may markedly affect the course of the adsorption: Fibers are prime examples of surfaces of this type.

Anderson (3) demonstrated through application of the BET equation that the heat of adsorption of the second through tenth layers of adsorbate were less than the heat or free energy of liquefaction of the adsorbate. This suggested that the outer layers were less energetically held, hence more easily removed. Bartell and Ruch (9) demonstrated for polished metal surfaces, adsorbed on which were layers of octadecylamine, that the energy of the first molecules leaving the film were much smaller than Zisman's 14.5 kcal/mole, but that desorption energy increased with depletion, becoming comparable to, or greater than, 14.5 kcal/mole.

Harkins (42) measured the effect of the presence of water on TiO_2 (anatase) upon the energy of emersion. Completely off-gassed, the energy of wetting is 520 erg/cm², while for this surface with only one milligram of water per gram of TiO_2 the energy (of emersion) dropped to about 370 ergs/

Table V-A.

Surfactant	ΔH_M (kcal/mole) Heat Micelle Formation	ΔS_M Entropy (cal/mole/degree)	Temp. °C	Added Electrolyte	Ref.
$C_{14}H_{29}SO_4Na$	—1.5		35-45		88
$C_7H_{15}COOK$	1.7		25	0.0417 M KOH	36
"	1.7		25	—	95
"	1.5		25	1.802 M KCl	95
$C_{11}H_{23}COOK$	—0.088 ± 0.002		25		52
$C_{12}H_{25}COOK$	—1.0; —2.4		25-35; 35-45		88
$C_{14}H_{29}COOK$	—1.0; —1.0		25-35; 35-45		88
$C_{10}H_{21}SO_3Na$	—0.5; —1.4		25-35; 35-45		88
$C_{12}H_{25}SO_3Na$	—1.8		35-45		88
Cetylpyridinium chloride	—0.3	1	25		51

Table VII. Heat of Immersion of "Graphon" in Various 0.5% Aqueous Solutions of Surfactants (98)

Surfactant	Heat of immersion ergs/cm²
Na lauryl sulfate	142
Na dodecylbenzene sulfonate (purified)	120
Na dodecylbenzene sulfonate (unpurified)	73
Na decylbenzene sulfonate (unpurified)	47
Polyoxyethylated nonylphenols	40-88
Water	32

cm^2. It is probable that the adsorption values given for fibers such as cellulose, which have high moisture regain values, are frequently in error, unless cognizance is taken of their moisture content.

Zettlemoyer (98) indicated that the total heat of immersion $\triangle H_T$ of "Graphon", for example, in surfactant solutions may be given by

$$\triangle H_T = \triangle H_A + \triangle H_D - \triangle H_M \quad (10)$$

where $\triangle H_A$, $\triangle H_D$, and $\triangle H_M$ are heats of adsorption, dilution and micellization, respectively. Since experimental values for total heat, heat of dilution, and heat of micellization may be determined, the heat of adsorption can then be calculated by Hess' law. Heats of immersion of "Graphon" were measured for sodium dodecylbenzene sulfonate solutions to which were added given amounts of builders. Sodium chloride had no effect on these values, and the maximum effect (increase in $\triangle H$) at lowest concentration was obtained with the multivalent anionic compound, sodium tripolyphosphate. Since none of the builders had any effect below the surfactant cmc, it seemed that the presence of micelles was necessary to this effect, the maximum surfactant adsorption occurring at this point as influenced by builder addition (98). The heat of adsorption $\triangle H_A$ of dodecylbenzene sulfonate on cotton at 38° and 2° averaged about 800 cal (27).

The data in Table VII demonstrate that considerable differences in heat of adsorption exist between surfactants, or even the same surfactant containing contaminants. Though the values are shown as heats of immersion, the differences between the surfactant and water values represent the net heat of adsorption (but without correction for heat of micellization). Not a great deal of such data are available, but the information shown should offer an appropriate approach for estimation of energy values in the detergent system.

Free energy changes accompany the sequestration by polyphosphates of the calcium ion (of hard water) in the detergent process. Irani and Callis (53) found the following free energy changes accompanying the association of calcium with $P_2O_7^{-4}$, $P_3O_{10}^{-5}$ and longer chain phosphate ions to be -7.6, -9.5, and -10.2 ± 0.2 kcal at pH values of 10-12, in the usual detergent solution range.

That free sulfonic acids are adsorbed from aqueous solution by cellulose through van der Waals forces is confirmed by an affinity increase with increase in the molecular area of the solute (32). It was indicated that the planar structure of cellulose insures a closer approach of the solute molecule with van der Waals adsorption.

The charge in colloidal systems, acquired by materials which do not themselves ionize, may be attained through preferential adsorption of ions in the solution. Adsorption of these ions at an interface was attributed to an ion-induced dipole interaction, resulting in an attractive force. Higher polarizability and lower hydration of anions caused them to be more readily absorbed than cations, and the hydroxyl ion was strongly adsorbed, probably through hydrogen bonding (strong dipole interaction), and unsymmetrical ion structure. Anionic surfactants were strongly adsorbed, water dipoles causing the molecule hydrophobe to be "squeezed out" of solution (90).

Cassie (15) demonstrated that any multimolecular layer on a surface showing finite contact angle must be in the form of distinct clusters or patches of molecules, and not in a continuous film. The potential energy of a condensed molecule relative to one in the bulk liquid, E_L, may be deduced from the adsorption isotherm, lying in the range of 175-300 cal/mole, of the order of magnitude to be expected from surface clusters each containing a few molecules. E_L for water adsorbed on keratin was 550 cal/mole, though this value was not corrected for keratin swelling. Cluster size at saturation, deduced from the isotherms was two molecules of water per cluster on keratin, and five per cluster on TiO_2; the clusters were small, hence the surface energies should be large.

(To be continued)

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Detergent Maker Expands

H&L Products, Inc., Oak Ridge, Tenn., manufacturer of "Trik" liquid detergent, recently announced plans for the enlargement of present manufacturing facilities and the development of other household products.

New Armour Industrial Chemical Co. research laboratory and pilot plant (right background) adjoin Armour's McCook, Ill., plant, part of which appears on extreme left. New building offers 30,000 square feet of working space, including 11 labs.

New Armour Research Labs

ARMOUR Industrial Chemical Co. announced recently the formal opening of a new laboratory and pilot plant building devoted to research on chemicals derived from animal and vegetable fats and oils. Located at Armour's McCook, Ill., plant, the new facility is a modern one story structure. A central corridor connects 11 working laboratories, lobby, conference rooms, and offices. The laboratory area provides 26,000 square feet of working space.

Laboratory and pilot plant are linked by a service corridor which opens on a technical library, store room, and offices. Located close by is a shop where specially designed laboratory equipment can be built.

The laboratory houses facilities for new product research, studies on process improvement, analytical work and application research. Constant humidity, low temperature, and high pressure can be maintained in some of the laboratories. Experiments calling for pressures as high as 7,500 psi can be accommodated in four especially constructed areas.

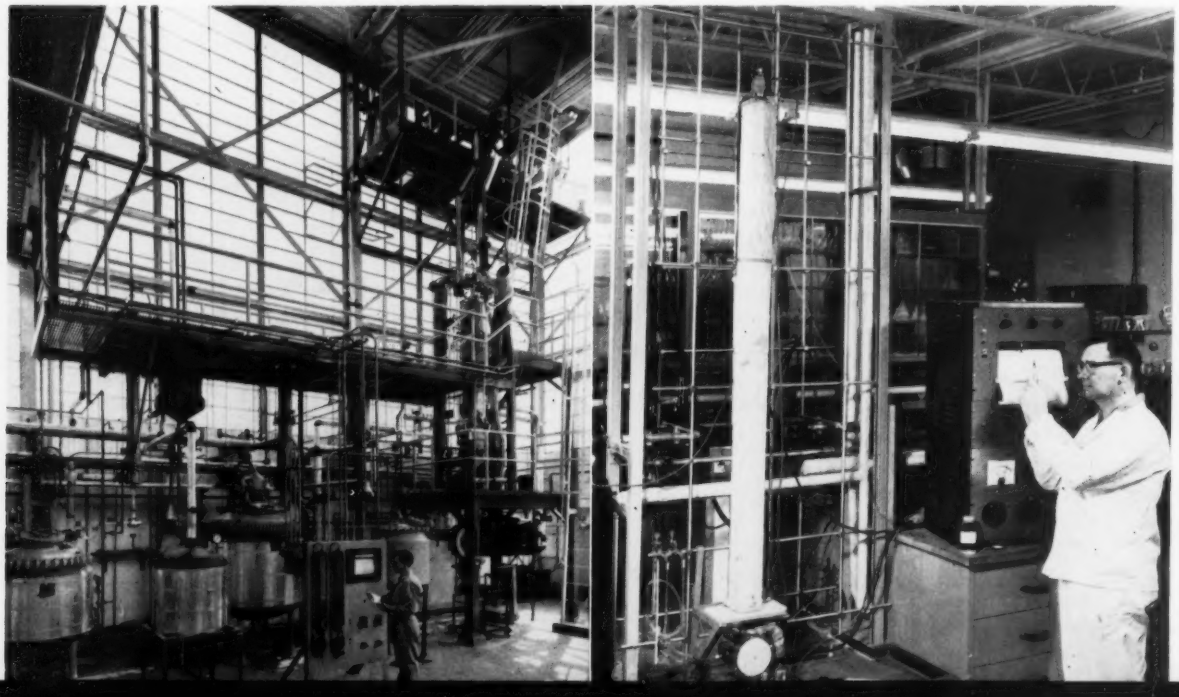
Built to handle pressure reactions ranging from 100 to 5,000 pounds, the pilot plant has glass lined reactors, autoclave facilities ranging from two to 300 gallons, and units for high vacuum, high temperature, flash fractional distillation. The plant is equipped with a wide variety of filtration systems including a rotary vacuum washing unit. For low temperature reactions a portable refrigeration unit is available.

The laboratory and pilot plant employ a staff of 75 under the direction of M. C. McCorkle.

Armour's McCook plant makes saturated fatty acids and

(*Turn to Page* 174)

Glass enclosed pilot plant (left) at Armour's McCook laboratory features scale model fractionating tower and reactors, is equipped to handle wide range of processes and reactions. Sample of fatty chemical is being measured (right) before being submitted to gas chromatographic analysis. Solution is put into top of column, as each fraction emerges it is automatically recorded on a chart and collected in tubes located at the base of column.



For over 36 years, Industry has looked to West End Chemical Company as a dependable source of chemicals. Soda ash, sodium sulfate, salt cake, quicklime, hydrated lime and borax are included in the product line.

Located in the Mojave Desert some 190 miles northeast of Los Angeles, West End's Searles Lake location has long been recognized as one of the world's largest sources of inorganic salts. Searles Lake, which is now dry, was formed through the ages by waters carrying small quantities of the various salts in solution from the Sierra mountain range to what was then an inland sea. Subsequent volcanic activity blocked off the flow of these waters, leaving the lake to evaporate to its present day level. These acts of nature caused enormous quantities of inorganic salts to be left in the Searles Lake Basin.

West End's connection with Searles Lake dates back to that period following World War I when numerous companies were experimenting with various processes for extracting mineral wealth. After a number of years of experiment and research, the Hellmers Process (H. D. Hellmers, now West End Vice-President, Production) was adopted, and it is still the basis for today's operations.

Briefly described, the Hellmers Process involves the pumping of brine from the lake, treating the brine with carbon dioxide gas to form sodium bicarbonate which precipitates out. In the carbonation phase of the process, the borates contained in the brine as sodium metaborate and sodium tetraborate are converted to the more acid higher borates of sodium by the reaction of CO_2, eliminating part of the Na_2O by forming $NaHCO_3$. After separation of sodium bicarbonate from the carbonated brine, the latter is mixed with additional untreated brine from the lake in such proportions that practically all of the borates in the mixture are in the form of sodium tetraborate. This results in a state of supersaturation with respect to sodium tetraborate, which is crystallized from the mixture by the simple process of cooling and agitating. After settling, the brine is sent to the sodium sulfate recovery units and the settled borax recovered and refined. The bicarbonate recovered in the first step of the process is filtered, washed free of impurities, and converted to various grades of soda ash.

For a number of years soda ash and borax were West End's sole products. In 1938, installation of a hydrator made it possible to market hydrated lime.

In 1955, encouraged by the growth of the kraft pulp and detergent industries, West End made its first offering of salt cake and anhydrous sodium sulfate. In the intervening years, West End has become a major national source of these chemicals.

The new West End soda ash plant now under construction at a second natural source in Wyoming is scheduled on-stream in 1962. Produced under the same uniform management and controls of the parent plant, high quality West End soda ash from Wyoming will be available to industry in an ever-broadening market.

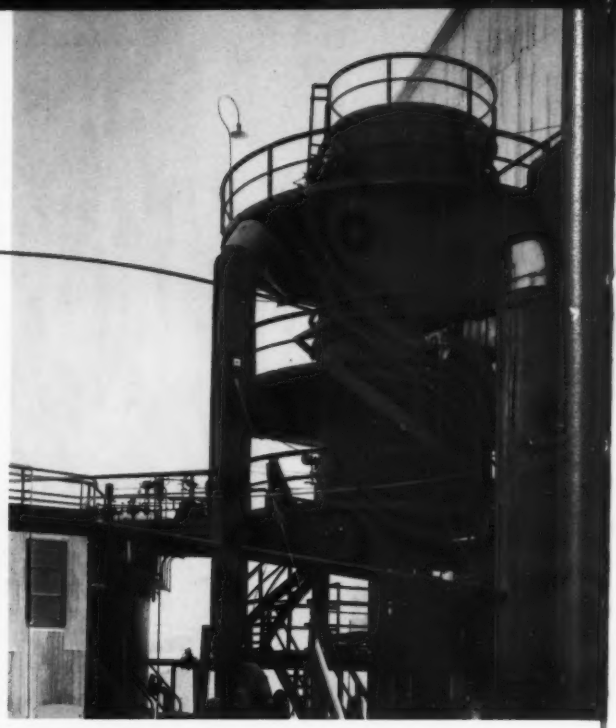
WEST END CHEMICAL COMPANY
Division of Stauffer Chemical Company

Stauffer CHEMICALS

636 California St., San Francisco, Calif. • Plant, Westend, Calif.

SODA ASH • BORAX • SODIUM SULFATE • SALT CAKE • HYDRATED LIME • QUICK LIME

WEST END SODIUM SULFATE



Since mid-1955, West End has been recognized as a major producer of high-quality anhydrous sodium sulfate. Original production capacity of sodium sulfate at the West End plant was 50,000 tons annually, but with completion of a second sulfate unit in the fall of 1956, production capacity was increased to 120,000 tons per year. With completion of a third unit in 1961, capacity will increase to 200,000 tons per year. Today, West End is solidly qualified to handle the complete requirements of its customers dependably, economically and efficiently.

High solubility, high purity, low heavy metal content, and pure white color are the distinctive features of West End anhydrous sodium sulfate. It is used in a varied number of industrial processes, with major buyers being detergent manufacturers and chemical compounders.

ANHYDROUS SODIUM SULFATE

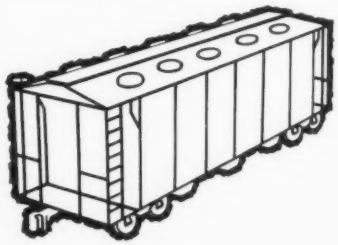
TYPICAL ANALYSIS

	Typical %	Guarantee %
Na_2SO_4	99.57 - 99.87	99.5 Min.
NaCl	.06 - .14	.15 Max.
B_2O_3	.03 - .06	.08 Max.
CO_2	.02 - .04	.04 Max.
Na_2O	.05 - .08	.08 Max.
H_2O	.01 - .10	.20 Max.
Insoluble	.001- .01	.03 Max.
Fe	1 PPM	3 PPM Max.
As	1 PPM	3 PPM Max.
Cu+Zn	Not Detectable	
Solution	Clear	
Color	White	
Density:	Struck 70-75 lbs./cu.ft. Tapped 83-87 lbs./cu.ft.	

TYPICAL SCREEN SPECIFICATIONS

Screen No.	Coarse %	Fine %
+ 20	Trace- 0.5	0
+ 30	Trace- 2.0	Trace
+ 40	4.0- 8.0	0.4
+ 50	12 -20	2.0
+ 60	25 -35	6.0 to 12.0
+ 80	40 -52	12.0 to 15.0
+100	56 -68	21.0 to 26.0
+150	70 -75	30.0 to 34.0
+200	80 -92	44.0 to 57.0
−200	8 -20	56.0 to 43.0

WEST END ANHYDROUS SODIUM SULFATE IS MOVED ECONOMICALLY at great distances by truck, ocean vessel or by West End's own fleet of leased covered hopper rail cars. West End schedules transportation to assure customers of delivery on scheduled delivery dates.



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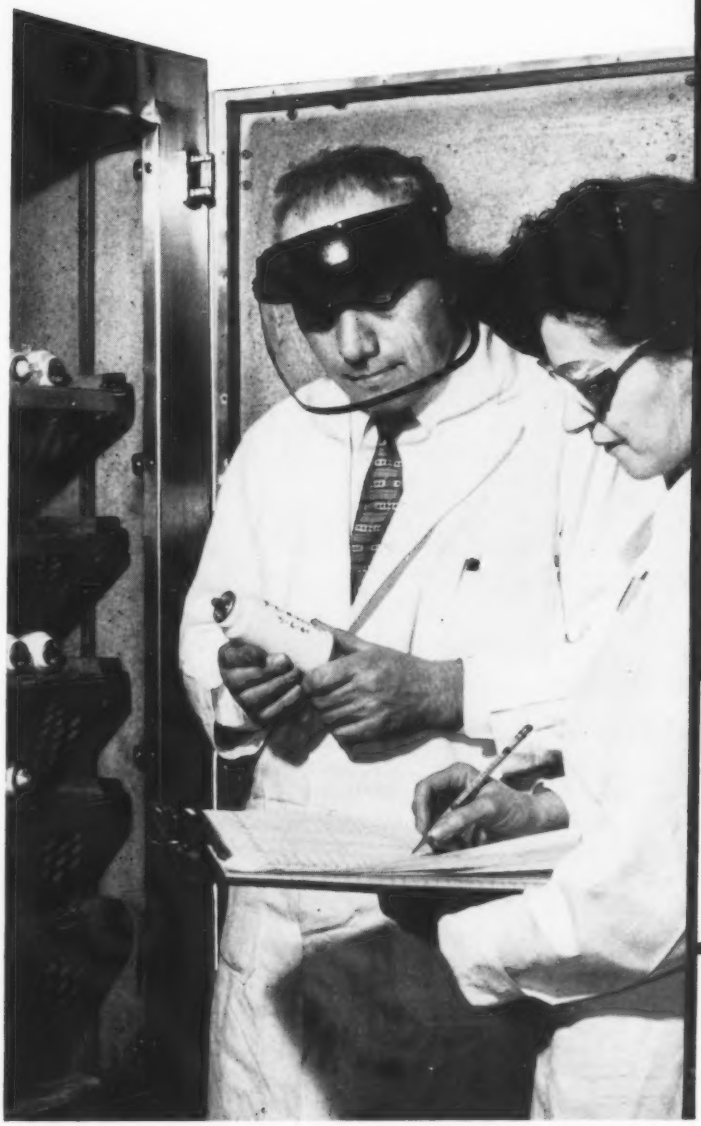

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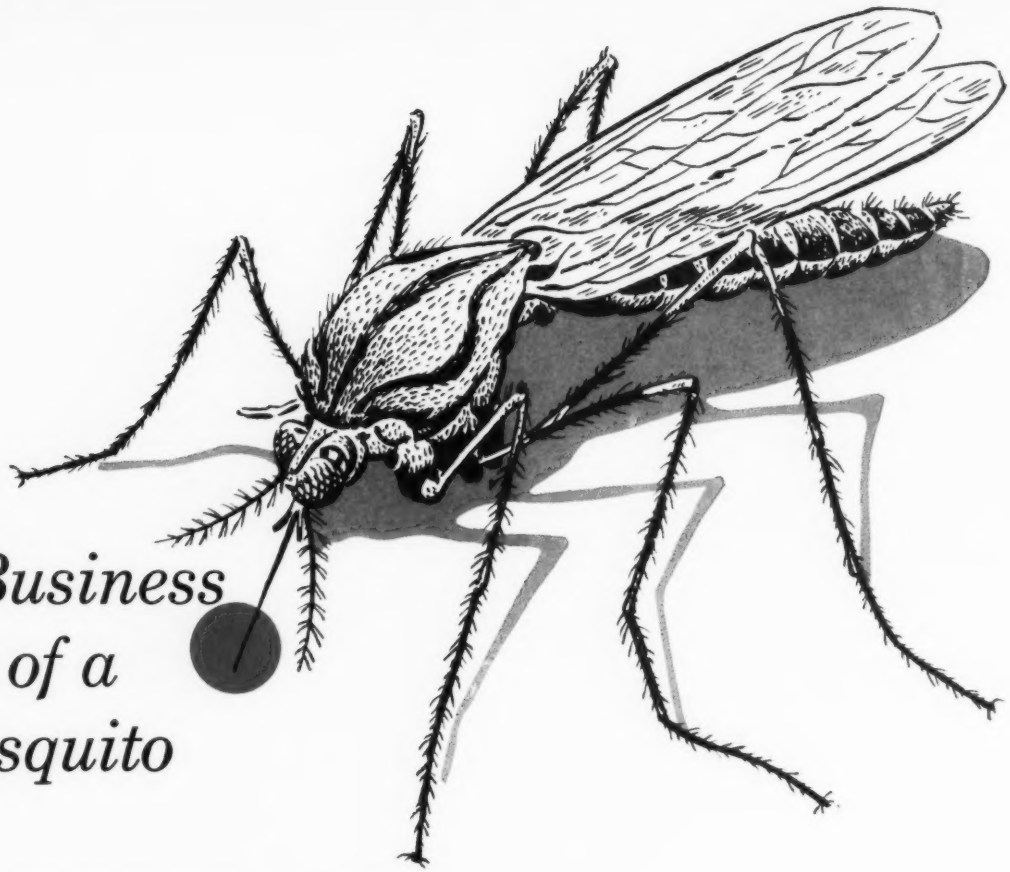

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Consumer's view of

Insecticide Marketing

Key to increased insecticide sales lies in customer education through information and distinctive labeling and the intelligent, more extensive use of magazine advertising

By Andrew B. Meldrum,*
Meldrum and Fewsmith, Inc.
Cleveland, O.

INSECTICIDE manufacturers do an excellent job of keeping abreast of the latest technical developments. How to develop new products and how to make present products better dominates the thinking of the industry.

But manufacturing is only half the job. The other half is marketing, and that is my subject. Marketing is an all encompassing, sometimes confusing word. To illustrate what I believe it includes, I shall list ten areas of marketing. Any of them could be the subject of a study. While I shall touch upon several, I shall concern myself basically with only one. It is an area where I believe the insecticide industry has a definite weakness.

Ten Areas of Marketing

1. Product Development
2. Product Testing
3. Market Testing
4. Product Packaging
5. Product Introduction
6. Distribution
7. Advertising
8. Promotion
9. Detailing
10. Sales Training

Insecticide manufacturers are familiar with market trends . . . in their business, and in every business. They know how cities are growing . . . OUT. People are moving to the suburbs. They are building more houses, planting more lawns and more gardens. They are cooking outdoors. Patio living is everywhere. So are bugs. So, a lot of brand new customers are coming along every year . . . people who have problems calling for insecticides, but people who have never heard of individual products. The insecticide business should be good, and growing.

But, along with the population growth, and change in where people live, has come the most important change of all, from the manufacturer's standpoint . . . *where people buy*. We all know the importance of supermarkets in selling food. And they are selling more than food, as every member of the industry should be well aware. The new and large volume drugstores are self-service, too. Lagging a bit behind but also moving in the direction of self-service are two more important types of outlets for insecticides . . . home and garden supply stores and hardware stores. Even in the attractive modern suburban department stores you can't expect to be waited on with old-fashioned alacrity. It is much more apt to be a casual, disinterested, "May I take your order" approach.

The result is that the product must sell itself. The package must attract favorable attention. This applies to all consumer products, including soaps, detergents, polishes and waxes, as well as insecticides. All manufacturers of products to be sold in self-service stores are well acquainted with the importance of package design. A successful package must be mod-

Figure 1. Insecticide display in Marshall's Drug Store, Southgate, Ohio.

*Paper presented at 47th midyear meeting of Chemical Specialties Manufacturers Association, Chicago, May 17, 1961.

ern, clean looking, colorful. The artists who design packages have been having a field day and, on the whole, doing an excellent job.

But marketing insecticides is not like marketing anything else you can find in a modern supermarket. There is also more confusion at the insecticide display . . . confusion between products of the same manufacturer . . . confusion between competing brands.

So the main point I'd like to discuss is what happens at the point of sale. Actually it is more what will be happening at the point of sale during the years ahead as the number of self-service stores increases.

Because of self-service, and because of the confusion in consumers' minds, it is my feeling that the biggest—and one of the easiest—areas where insecticide manufacturers can help themselves is in the way they package their products. I'm not talking about the overall design or color or attractiveness. In most cases, packages look just as modern as any. But an insecticide package meets a different problem . . . that of answering consumer ignorance. Before a customer buys any product, he wants to know the answers to three questions:

(1) What is it for?
(2) How do I use it?
(3) What results can I expect?

Now if a woman is shopping for laundry soap she knows the answers to all three questions almost automatically. What the product is for, is answered by a brief glance at the label. How to use it, is on the package. And the answer to question (3), what results to expect, she knows from advertising, mainly . . . whiter, brighter sheets, etc.

The same thing is true of a liquid self-polishing floor wax . . . or for almost anything else I can think of, aluminum foil . . . tooth paste . . . or what have you. All three questions are answered. But what about house & garden spray? Or multipurpose dust? Or 72% chlordane? What are they for? Or what results can the consumer expect? Manufacturers may say, "The answers are on the package." But are they? For self-service shoppers? I don't think so . . . and I'd like to tell you why.

Three months ago my wife started to get ants . . . in her kitchen. I told her not to worry. I'd shop around and bring home the remedy . . . and, not entirely incidentally, start gathering some material for this study. I took a tape recorder with me, and this is part of what it recorded:

Female: May I help you?

Male: Yes. My wife tells me we are having ants in the kitchen for the first time and I am wondering what you would recommend to help us get rid of them.

Female: Yes, indeed. Here is a well-known remedy called "Antrol." I know it is good because I used it myself 30 years ago.

Male: These bottles look a little shopworn. How old do you suppose they are?

Female: Well, these do happen to look a little bit shabby, but here is a new one here. It's just 89¢. The beauty of this is that it is sweet. It actually attracts ants in droves. They eat it, then go back to their nest and die there quietly. Incidentally, it kills the rest of the ants there, too.

Male: I wonder why it doesn't say that on the package. I guess my wife probably wouldn't want that. It might spill. The kids might get into it. Don't you have something new, in a spray, perhaps?

Female: Yes, this "House and Garden Spray" is a very good product, and I'm sure it is good for ants. Le's see what it says on the back. Yes, here it is. For ants. Hmm, I'm afraid the print's a little too small for me to read. Can you read it?

Male: Yes, it says, "Spray trails, nests and points of entry, hitting as many as possible."

I wonder how often you have to spray. Do you know how long one spraying lasts?

Female: No, but I'm sure this would do a good job for you. Would you like to take it with you?

Male: No, I think I'll look around a bit. Here, what about this ant and roach killer? That ought to be good.

Female: Yes, that's made by the same people and you know what a good reputation that company has. Let's see what it says on the back. Hmm, I guess you'll have to read it too.

Male: It says almost the same thing, except it doesn't say you have to hit as many as possible.

I wonder which is better? I still have no idea how often we should spray. I wonder if this spray acts like that Antrol you showed me, where the ants take it back to their nest, spread it around and eventually eliminate the whole nest.

Well, I guess I just won't get anything today, thank you.

Now one conversation—and that with a very poor saleslady—doesn't prove a thing, except possibly that packaging is important . . . even in a store where somebody is supposed to wait on you. Manufacturers can no longer assume that salespeople will do a careful or intelligent job of explaining their products.

More and more, your package will determine what happens at that vital point of sale. Answer the consumers' questions, and increased sales will be your reward. Why not tell us how the product works. Does it kill only on contact, or while the spray is still wet? Does it do anything to get at the source, like the poison the ants eat and take back to their nest? And what is the difference between the house and garden killer and the ant and roach killer? There isn't one consumer in a hundred who— looking at two typical packages—could tell the difference. I know, of course, that insecticide formulations are on the back of the package . . . but a consumer is not a chemist.

Is there more of a certain type of ant poison in the ant and

roach killer than in the house and garden spray? If so, why not say so? If the house and garden spray will take care of ants in many cases but the ant and roach killer is stronger and recommended for more serious problems, again, why not say so?

Most of the calls I made were on self-service stores, so the tape recorder didn't do me much good. There just wasn't anybody to talk to. But I have used a camera to illustrate what the average consumer runs into.

The selection of products that greeted me on my first call . . . a typical modern self-service drugstore appears in Fig. 1. There are 16 different products that could help me get rid of ants. I spent over half an hour reading labels with no one to advise me. I didn't even have anyone ask if he or she could help me.

All three packages of "house and garden killers" shown in Fig 2. are attractive . . . all are very competitive . . . and all three say almost the same thing. ("Raid" by S. C. Johnson & Son, Inc., "Black Flag" by Boyle-Midway Division, and "Hep" by B. T. Babbitt, Inc.

What do these best selling, large volume insecticides tell me, the consumer? Not all that I want to know, by any means. And nowhere any reason for me to buy one rather than another. Their messages are almost identical.

Instructions on the backs of all three cans (Fig. 3) are the same, almost to the wording and the number of words used. Even the size of the printing is almost the same, so small that even good vision is sorely taxed.

I am sure no one of the manufacturers could possibly tell me if the following is his wording or a competitor's. I quote: "For ants, spray trails, hills, around window sills and openings, around pipes and baseboards where ants crawl, hitting as many as possible."

But how does the spray work? Does it work only on contact? Will the ants die if they crawl through it? If so, how soon after I spray must they crawl through it? How many hours or days will the effectiveness of the spray last? No word to answer any

Figure 2. (top) Close-up of "Raid", "Black Flag" and "Hep" insecticides. Figure 3. (center) Close-up of backs of cans of "Raid", "Black Flag" and "Hep". Figure 4. (bottom) "Raid" house and garden, ant and roach, and flying insect killers.

Figure 5. "Black Flag" ant and roach killer, "KanKil" roach and ant killer and "Raid" ant and roach killer.

WHILE SPRAYING.
N. Y. F. D. C. of A. No. 1617
DIRECTIONS
How To Operate. Remove protective cover. Be sure spray nozzle points outward. Press down on push button valve. Do not use as a space spray. Hold container 6 inches to one foot from areas to be sprayed. Spray until surfaces are wet, usually at the rate of one foot per second. Thorough applications produce a residual coating effective for a period of weeks. If re-infestations occur, repeat applications as necessary.
ROACHES, RESISTANT ROACHES, WATERBUGS, CRICKETS, CENTIPEDES and ANTS. Direct spray in cracks and crevices, under sinks, along baseboards, basement corners, ant trails, ant hills, window and door sills where insects may enter.
CLOVER MITES, BOXELDER BUGS, SPRINGTAILS, (COLLEMBOLA), BOOK LICE (PSOCIDS) AND SOWBUGS. Spray window and door sills and other points of entry. Apply to outside foundation, especially under doors and windows, around porches and along foundation next to the ground. Apply directly to boxelder bugs

Figure 6. Back of "Black Flag" ant and roach killer, showing clearly printed use directions.

of these questions on any of the packages.

And the confusion is only beginning. Look at "Raid House & Garden," "Raid Ant & Roach," and "Raid Flying Insect" Killers (Fig. 4). I might assume that the ant and roach spray would be better for my purpose. But nowhere on the can am I told whether this is any better than the house and garden killer, how it is different or why it is stronger. On the back of both the ant and roach spray and the flying insect killer instructions for killing ants remain almost identical with those on the back of the house and garden spray. "Apply to ant trails, also around doors and windows and wherever ants enter house. Repeat treatment as required."

And again, looking at three leading brands of ant and roach killer, (Fig. 5.) all look alike and say the same thing . . . almost to a word. There's nothing but the formula to differentiate these products from the house and garden sprays.

This "Black Flag Ant & Roach Killer", (Fig. 6) perhaps deserves a word of commendation, since the directions on the back of the can do differ from the others in one respect. It says, "Leaves residual coating, effective for a period of weeks." This statement is brand new. It is all Boyle-Midway's, and it is helpful to the consumer. It begins to answer the question, what to expect, by telling how long it lasts. To a brand new consumer, very important. But how does the residual coating work? Do the ants die on it, Or from eating it?

Boyle-Midway also makes "Black Flag" New Squeeze Can Insecticide Powder (Fig. 7). The label says, "New squeeze can makes dusting easier and more efficient . . . remains effective for many weeks." It states, "This product kills ants," and also informs us that "Ants travel over regular routes from their nest outside to their

(*Turn to Page* 97)

Figure 7. New "Black Flag" squeeze bottle for insecticide powder (left). Figure 8. Counter display for "Antrol" ant traps (center). Right: "Ant Buttons" ant and roach killer package.

Hazardous Substances Labeling

A preliminary analysis of proposed regulations to Federal Hazardous Substances Labeling Act

By Dr. Emil G. Klarmann,*
Chairman, Precautionary Labeling Committee

AT the December, 1960, meeting of the Chemical Specialties' Manufacturers Association, I had the privilege of speaking on the subject of the Federal Hazardous Substances Labeling Act which became Public Law 86-613 on July 12, 1960. On this occasion I attempted to place the new statute in its proper perspective with regard to other relevant federal laws, and particularly the Federal Insecticide, Fungicide, and Rodenticide Act, and the Federal Food, Drug, and Cosmetic Act. In so doing I drew attention to those provisions of the new law which went into effect immediately with its enactment, as contrasted with those which had to await the promulgation of regulations to render them enforceable.

This material was published in the CSMA Bulletin No. 278-60 (dated December 22, 1960), also in the February and March 1961 issues of *Soap and Chemical Specialties*. On March 3rd, 1961 there appeared CSMA Bulletin No. 87-61 which furnished supplementary and explanatory information relevant to the Federal Hazardous Substances Labeling Act.

The Precautionary Labeling Committee and CSMA Counsel have been maintaining contact with the Food and Drug Administration in the matter of the forthcoming regulations over a period of months and at frequent intervals. Following a final conference with the Food and Drug Administration which took place prior to the publication of the proposed regulations, the Committee's views were confirmed in a letter to the Food and Drug Administration, dated March 24th, 1961 relevant to certain matters which were to be spelled out eventually by the regulations.

The *proposed* regulations appeared finally in the April 29, 1961 issue of the *Federal Register*. I am emphasizing here the word "proposed" which means that these regulations are tentative; actually, interested persons had until June 28, 1961 an opportunity to present their views on this proposal in writing. (See CSMA Bulletin No. 154-61, dated April 28, 1961).

The Precautionary Labeling Committee met on May 14th, and again on May 16th for a discussion of this important subject. Because of insufficient time in which to conclude our discussion, another meeting was held May 23rd in New York. An Inter-industry Committee meeting was held May 26th, also in New York. This group represents several industries interested in precautionary labeling legislation related to ours. In addition to the CSMA, the following organizations are represented: Manufacturing Chemists Association, Association of American Soap and Glycerine Producers, American Petroleum Institute, National Paint, Varnish and Lacquer Association, National Agricultural Chemicals Association and Mail Order Association of America.

Presumably, most of you must be familiar by now with what is officially described as the "Proposed Definitions and Procedural Interpretative Regulations." I should like to give here an annotated summary of this proposal, or rather of some of its more noteworthy provisions. This analysis is by no means claimed to be complete, as indicated by the qualification "preliminary" in its title.

Containers: Public Law 86-613 was enacted "to regulate the interstate distribution and sale of packages of hazardous substances intended or suitable for household use." The proposed regulation maintains that this means any container which under customary or reasonably foreseeable conditions of purchase, storage or use may be used not only in or around the house, but also in apartment buildings. We believe that this proposal is broader than was intended by the Congress. At the present time, several states have labeling regulations, usually enforced by their respective departments of labor, which apply to the handling of large containers of hazardous substances by employees in areas of the type of an apartment house, and the like. In our opinion, it was not the purpose of the new law to provide for dual regulation of large containers of, e.g., janitorial supplies; the law intends, we believe, to require precautionary labeling on what are traditionally known as products generally used in and around the "household,"

*Dr. Klarmann, who is vice-president in charge of technical services for Lehn & Fink Products Corp., New York, presented this paper during 47th midyear meeting, Chemical Specialties Manufacturers Association, Chicago, May 17, 1961.

as this term is employed in everyday language.

Prominence of Required Labeling: Public Law 86-613 requires that the several statements constituting precautionary labeling be located prominently, and that they be in conspicuous and legible type in contrast by typography, layout, or color with other printed matter on the label.

The proposed regulations interpret this language to mean that the precautionary statements must appear together on the main panel of the label or in proximity to the principal elements of the label, also that the precautionary statements must be placed within the borders of a square or rectangle. The regulations provide further that the color of the precautionary statement and the border line be in strong contrast with the background color of the label. The signal word is required to be in 30 point type while the statement of the principal hazard, the name of the hazardous substance and the statement "Keep Out of the Reach of Children" must appear in 12 point type. However, if there is no other type on the label as large as required for the signal word, the type used for the signal word shall not be smaller than the largest type on the label. Finally, the name and place of business of the manufacturer, packer, distributor or seller must be placed on the main display panel of the label.

You will probably agree that these requirements are more restrictive than the requirements for the labeling of pesticides as well as those for the labeling of drugs and cosmetics. There is good reason to believe that the proposed mandatory requirements are stronger than those of the governing statute, and that they are not well founded in its legislative history; above all, they do not reflect the experience with the use of the household products under consideration. With this as a premise, we feel that the front panel is not the only place where the required warning and precautionary labeling can be made prominent enough to accomplish the purposes of the new law, also that warnings can be both prominent and conspicuous without exaggeration as to type size.

Parenthetically, we understand that one of the purposes of the requirement to put all cautionary information on the main panel is to insure that the purchaser will see the warning before he buys. It may be questioned whether the governing statute contemplates this, or whether it would be of substantial importance to the public which, we feel, would be better served by having this wording appear, as a rule, in conjunction with the directions for use.

Definitions: The definition of a hazardous substance in the Public Law 86-613 covers six categories of hazard. Any substance which is (1) toxic, (2) corrosive, (3) an irritant, (4) a strong sensitizer, (5) flammable, or (6) generates pressure through decomposition, heat or other means will be subject to the Act if it is capable of causing substantial personal injury or substantial illness during or as a proximate result of any customary or reasonably foreseeable handling or use, including reasonably foreseeable ingestion by children.

"Highly Toxic": The statute recognizes also the category of "highly toxic" substances. The term "highly toxic" is defined in terms of experimentally verifiable toxicity to laboratory animals. However, it provides also for the inclusion in this category of substances which justify such listing in the light of relevant human experience data. On this basis, the proposed regulations declare the following to be highly toxic: carbon tetrachloride, diethylene glycol, kerosene, methyl alcohol and turpentine, when present as such, or in a mixture, but without indicating the minimum concentration of any of these substances that would render a mixture "highly toxic."

Dr. E. G. Klarmann

The effect and, no doubt, the intent of this classification is to require the signal word "poison" on the labels of the six substances listed. We believe that the list itself as well as the problem of mixtures require additional study with the view to obtaining broader clarification, as otherwise, e.g., a fraction of 1 percent of kerosene or turpentine in a mixture would render the latter "highly toxic."

In labeling "highly toxic" substances the proposed regulations call also for the "skull and cross bones" symbol, wherever the word "poison" appears. It should be noted that the law itself mentions only the word "poison." There is some question as to whether the legislative history of Public Law 86-613 justifies the requirement for the use of any symbols in labeling.

"Toxic": The Food and Drug Administration proposes that a "toxic substance" be defined in terms of results of laboratory tests, viz., if (in the case of toxicity by ingestion) its LD50 is more than 50 milligrams but less than 5 grams per kilogram of body weight, when administered to a group of white rats weighing between 200 grams and 300 grams. (Corresponding dosages are provided for inhalation and skin absorption toxicities).

There is reason to believe that the proposed 5 gram limit would require precautionary labeling on numerous substances which

have been used safely in the household for many years. To demand such labeling on substances which do not present significant hazards might ultimately dilute and weaken the effect of precautionary labeling on those which are truly hazardous. It has been estimated that the 5 gram limit would require precautionary labeling on some 75 per cent of all of the substances which are likely to be used in and around the household. It needs no emphasis that this industry has always supported precautionary labeling on products which either do, or could offer a hazard to the members of the household. By the same token, it is felt that precautionary labeling on substances not presenting relatively significant hazards would invite housewives to ignore it altogether, thereby creating a more serious problem in the handling and use of hazardous products.

"Irritant" and "Corrosive": The terms "irritant" and "corrosive" are defined in terms of special test, results of which are now being studied by the CSMA's Precautionary Labeling Committee. By way of preliminary information, the regulations introduce the concepts of "primary irritant" and "eye irritant," and provide for specific criteria derived from tests upon animals where available data of human experience do not warrant the direct application of the one or the other term. To establish primary irritation by animal test, the substance under investigation is applied to both the abraded and the intact skin of a minimum of six albino rabbits. The time of contact is 24 hours, and observations are made after 24 and 72 hours. The skin reactions which may be erythematous, or edematous, or both are evaluated according to their severity, and scored by means of a simple formula. An empirical score of five or more, brands a given substance as a "primary irritant."

In this connection, I am informed that some industrial laboratories have been using animals other than rabbits for this type of work, and that considerable information has been accumulated with respect to them. Such information, and also the future use of other animals should not be invalidated by regulation. Beyond this, some questions have been raised concerning the propriety of certain features of the methodology outlined in the proposed regulations. This whole subject is under study by the Toxicology Subcommittee of the P.L.C.; an attempt will be made to obtain a revision in testing procedure where indicated, in order to make it more representative of the conditions of common usage.

"... If these regulations should be adopted in their present form, virtually every label on the container of every household substance on the market would require some more or less radical change in order to be in full compliance."

In the tests designed to establish irritancy to the eye, the substance under study is instilled in one eye of each of six rabbits, the other eye serving as control. Readings are made after 24, 48 and 72 hours. Opacity or ulceration of the cornea, or inflammation of the iris are some of the criteria of an eye irritant.

A substance is deemed "corrosive" if it is capable of causing visible destruction or irreversible alteration in the tissue under the conditions of the testing procedure set forth in the regulations.

"Strong Sensitizer": Under the heading of "strong sensitizer" the regulations go into considerable detail in stressing the difference between primary irritation and allergic sensitization. Special reference is made to photodynamic sensitization. It will be remembered in this context that Public Law 86-613 provides that the H.E.W. Secretary shall designate specific substances as being "strong sensitizers," on the basis of an adequate inquiry. The proposed regulations furnish a first list of five materials in this category, viz. paraphenylenediamine, powdered orris root, "epoxy resins systems," formaldehyde, and oil of bergamot.

Paraphenylenediamine is used as an intermediate in fur dyeing; it is also an ingredient of photographic developers. With respect to "epoxy resins systems," the regulations appear to take account of the sensitizing potential of certain monomers (which upon condensation and polymerization in the course of resin formation lose this potential). One would be interested in the reason for listing orris root powder; this material was used, some time ago, in face and dusting powders, but it is unlikely to be found in any modern cosmetics (which are exempted anyway from the purview of this legislation). Oil of bergamot is used extensively in perfumery; the reason for its occurrence in the list of strong sensitizers is not readily apparent, unless there is an implied intention to create a basis for any pertinent regulatory action in the cosmetic area at some later date. Parenthetically, oil or bergamot has been associated with Berlock dermatitis, a photodynamically induced discoloration of the skin of susceptible individuals.

"Flammable": "Flammable" and "Extremely flammable" substances are defined in terms of the Tagliabue Open Cup Test. Those with a flash point of 20°F. or below are "extremely flammable," while those with a flash point above 20°F to and including 80°F are "flammable." The proposed regulations give a detailed description of the apparatus and procedure involved in the performance of the test.

"Generates Pressure": A hazardous substance which "generates pressure through decomposition, heat or other means" is defined as one which:

(1) explodes when subjected to an electrical spark, or to percussion, or to the flame of a burning paraffin candle for 5 seconds or less; or

(2) expels the closure of its container, or bursts its container, when held at or below 130°F. for 2 days or less; or

(3) erupts from its opened container at a temperature of 130°F. or less, after having been held in the closed container at 130°F. for 2 days.

These criteria are being studied by the Aerosol Division to determine the extent to which they are meaningful in describing the hazard.

Selected Comments

The term "substantial injury or illness" is defined as an illness or injury of a significant nature excluding wholly insignificant or negligible injury or illness, such as a temporary indisposition which a child might suffer from eating a bite of a standard bar of toilet soap. If the criterion by which a substantial injury or illness is to be gauged is nothing more than an indisposition resulting from eating a little soap, it is difficult to see how anything (other than soap) would be excluded that has an LD50 within the range of 5 grams or less per kilogram. This appears to establish yet another "standard" which could apply conceivably to substances even less toxic than those exhibiting the limited LD50 of 5 grams per kilogram, and one apparently devoid of any limitation of the area encompassed. Here again it appears that the proposed regulations tend to ignore the risk of overlabeling, by including within the context of the word "substantial" any minor upset which would be caused by the ingestion of a household substance. Actually, the regulations do not distinguish between toxicity *per se* and the foreseeable hazard, by failing to recognize that it is the hazard in the package as it is used in the household that would control in determining whether or not the product is subject to the Act.

Of the general requirements of the proposed regulations the following merit mention:

Where two or more parts or panels of a label are designed so that either one may be the part or panel displayed under customary conditions of purchase or use, the warning statements must appear on both parts or panels of the label when there is sufficient space.

The regulations provide also that the warning statement must appear wherever there are directions for use, including any accompanying literature, placards, pamphlets, booklets, or other graphic or visual devices used in connection with the sale or display of the product.

Under the "exemption," reference is made to the fact that substances subject to the Federal Food, Drug, and Cosmetic Act are exempt from the purview of the Hazardous Substances Labeling Act. However, no mention is made of the exemption of substances regulated under the provisions of the Federal Insecticide, Fungicide, and Rodenticide Act (and of its regulations and interpretations). This omission calls for correction.

The proposed regulations require that the substances listed in the Caustic Poison Act be labeled with the word "POISON" since the Commissioner believes that the lack of the word "poison" on substances which have been so labeled heretofore might indicate to the consumer a lesser hazard.

Concluding Remarks

In summary, the proposed regulations appear to deviate in several respects from the industry labeling program, also from the labeling requirements of the Federal Insecticide, Fungicide, and Rodenticide Act, and those of the Food, Drug, and Cosmetic Act. Statistics of accidental injury or illness as released by Poison Control Centers do not indicate that the products covered by Public Law 86-613 furnish the main causes of accidental injury or illness in and around the household. The proposed regulations, if promulgated in their present form, could bring about extensive overlabeling, thereby creating an adverse effect upon the campaign to educate users of household products as to the risks of careless handling or use of hazardous products, particularly by children. Certainly, every product which presents a hazard of substantial injury or illness under reasonably anticipated conditions should be appropriately labeled; however, if every substance were involved which could cause a trifling indisposition (e.g., one barely more severe than would result from a bite of soap) we would appear to be faced with the need for cautionary labeling, as required by law, of all but a handful of household products. As indicated before, there is room for doubt that this would promote safety in the use of household products.

The Chemical Specialties Manufacturers Association has presented a statement to the Food and Drug Administration pointing out what are believed to be shortcomings in the proposed regulations, and suggesting changes which, in our opinion, would make the regulations more consistent with the spirit and the intent of the Federal Hazardous Substances Labeling Act. Beyond this, the Precautionary Labeling Committee would suggest that each chemical specialties manufacturer will want to evaluate the impact of the proposed regulations on his own products. Only he can advise the Food and Drug Administration as to accident experience or lack of accidents with his own products. In this way, the Food and Drug Administration might be made better aware of some of the practical problems raised by their proposals.

To give you a preliminary idea of the effect which those proposed regulations would have on your products, I refer to the labeling exhibit held during the 47th

(*Turn to Page* 97)

All this for me?

Yes . . . this is one of the laboratories where we test new IFF fragrances "in the product" to be sure they are technically as well as aesthetically correct.

WONDERFUL WORLD OF FRAGRANCE

Service facilities, such as this Cosmetic Laboratory at IFF, New York, fully test newly-created perfumes and aromatic materials for shelf-life and compatability in all types of consumer products where fragrance is a factor.

In addition to the imaginative artistry of the perfumer, the creation of a successful new fragrance requires a thorough technical understanding of its use in the product for which it is produced. It is only with such thoroughness that truly outstanding perfumes can be developed to assure your new product effective and lasting sales appeal.

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INTERNATIONAL FLAVORS & FRAGRANCES INC.

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Creators and Manufacturers of Flavors, Fragrances and Aromatic Chemicals

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Eastman now offers polish formulators 7 basic types of polyethylene

New Epolene resins enable you to formulate broader range of liquid and paste polishes

The wide range of physical properties now available in Eastman's Epolene series of low-molecular-weight polyethylene resins provides formulating flexibility never before possible. For with the addition of three new resins (Epolene LVE, HDE and HD), polish makers can choose now from among seven different types to improve existing formulations or to develop new products.

Epolene resins produce self-polishing floor polishes that exhibit high gloss, anti-slip, water-spotting resistance and rebuffability. Emulsions of up to 40% solids can be prepared. Properly formulated, polishes made from Epolene are low in color and do not darken or turn yellow. Neither do they build up color with repeated applications.

Choose from either emulsifiable or non-emulsifiable types to obtain the right formulating characteristics and performance properties for your equipment and service.

Epolene E *emulsifiable* • Epolene E produces water-emulsion floor polishes that exhibit an excellent balance of high gloss, hardness, durability and good resistance to water-spotting, scuff and dirt pick-up. Ideally suited for heavy traffic, polishes made from Epolene E exhibit extreme toughness due to its higher molecular weight.

Epolene LVE *emulsifiable* • Lower in melt viscosity than the other emulsifiable Epolene resins, Epolene LVE has somewhat better handling characteristics and is the easiest to emulsify. It is softer than other resins in the series, too, and therefore may be expected to contribute better anti-slip properties and rebuffability to floor polishes made from it.

Epolene HDE *emulsifiable* • The first high-density emulsifiable polyethylene available, Epolene HDE is much harder than other resins in the series, yet quite easy to handle. A film of unmodified Epolene HDE emulsion is almost as hard as a film from a finished floor-wax formulation (rebuffable type). This increased hardness is due not only to the nature of this high-density polyethylene, but also to the fact that it is more compatible with oleic acid than are other emulsifiable polyethylenes. Epolene HDE restores rebuffability to polymer-containing polish formulations without sacrificing hardness.

Epolene N *non-emulsifiable* • Epolene N can improve significantly the properties of paraffin, microcrystalline or other waxes and is easily blended with these materials. It can replace part or all of the hard waxes in solvent paste polishes, for example, automotive polishes. Such polishes are characterized by low color, excellent hardness and gloss, and remarkable durability.

Epolene LV *non-emulsifiable* • Epolene LV and Epolene N are useful in similar applications. The LV type is softer than Epolene N, however, and because of its lower melt viscosity is somewhat easier to handle.

Epolene HD *non-emulsifiable* • An extremely hard material, Epolene HD is nevertheless easy to handle because of its low melt viscosity. It has a high softening point, and may be blended with waxes to increase their melting points. Epolene HD has a higher density than the other non-emulsifiable polyethylenes in the series.

Epolene C *non-emulsifiable* • Higher in molecular weight (7000) but lowest in density (0.907) of all the Epolene resins, Epolene C may be used in modifying waxes to increase melting points or to improve toughness and gloss.

Type	Molecular Weight	Brookfield Viscosity (cps. @ 120°C.)	Density	Penetration Hardness (100g./5sec./ 77°F., 10ths of mm.)
Epolene E	2500	1500	0.938	2
Epolene HDE	1500	455	0.956	1
Epolene LVE	1500	400	0.939	5
Epolene N	2500	2500	0.928	1
Epolene HD	1500	340	0.938	0.5
Epolene LV	1500	360	0.925	3
Epolene C	7000	16,000	0.907	7

If you are using low-molecular-weight polyethylenes in your polishes, investigate the complete Epolene series. Your Eastman representative will gladly explain the advantages of each of the resins in the series and will show you how to realize the most profitable use of them in your formulations. Ask him for specific formulating assistance and about the new time-saving, cost-cutting emulsifying technique developed at our laboratories.

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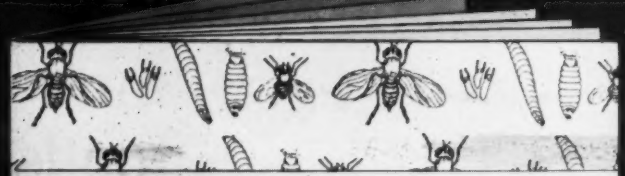
EASTMAN low-molecular-weight polyethylene resins

SALES OFFICES: Eastman Chemical Products, Inc., Kingsport, Tennessee; Atlanta; Chicago; Cincinnati; Cleveland; Detroit; Framingham, Massachusetts; Greensboro, North Carolina; Houston; New York; Philadelphia; St. Louis. **West Coast: Wilson and Geo. Meyer & Company,** San Francisco; Los Angeles; Portland; Salt Lake City; Seattle.

NEW BULLETIN FOR 1961

From National Canners Association describes importance of . . .



DROSOPHILA CONTROL

The following excerpts are taken from this bulletin.

NATIONAL CANNERS ASSOCIATION
1133 - 20TH STREET, NORTHWEST
WASHINGTON, D. C.

NOTICE

"The Food and Drug Administration has made extensive seizures of tomatoes and tomato products due to *Drosophila* egg and maggot contamination." ..."We strongly urge the cooperation of all canners of tomatoes and tomato products to initiate a complete program of *Drosophila* control."

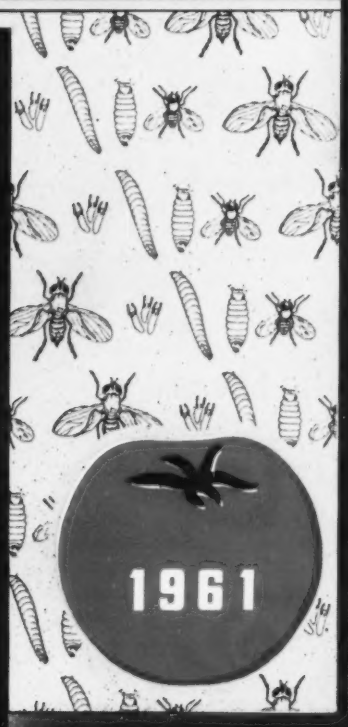
Use of Pyrethrum Dust

"Extensive experiments and industry experience have revealed that pyrethrum dust containing 0.1% stabilized pyrethrins plus 1.0% piperonyl butoxide applied to tomato fruit will repel Drosophila flies and largely prevent egg deposition for 10 to 20 hours."

"Tomato canners are urged to discuss the above pyrethrum dust requirements with their supplier and obtain adequate certification that the dust purchased meets these requirements, namely:

(a) "That the dust contains a minimum of 0.1% stabilized pyrethrins plus 1.0% of piperonyl butoxide."

(c) "That the pyrethrum dust has been prepared in thoroughly clean equipment."



Copies of "Drosophila Control," from which these excerpts were taken, are available free from Fairfield Chemicals.

Pyrethrum dust bases, containing piperonyl butoxide and pyrethrins, are available to insecticide formulators and processors nationally through the nationwide field offices and sales representatives of Fairfield Chemicals, Food Machinery and Chemical Corporation.

*Reg. U. S. Pat. Off. F. M. C.

fmc FOOD MACHINERY AND CHEMICAL CORPORATION ®

Putting Ideas to Work

FOOD MACHINERY AND CHEMICAL CORPORATION

Fairfield Chemicals
Sales Headquarters
441 LEXINGTON AVENUE, NEW YORK 17, N.Y.

Branches in principal cities. In Canada: Natural Products Corporation, Montreal and Toronto.

Compatibility of a number of chemicals with

Aluminum Aerosol Containers

By R. M. Howe and F. M. Languedoc*,
Connecticut Chemicals (Canada), Ltd.
Toronto

Are there "families of formulations" which can be packed in "bare" aluminum cans? Polar solvents appear corrosive to bare aluminum, but in many cases can be effectively controlled by water or other reaction inhibitors ... Non-polar solvents appear relatively safe, as do majority of non-metallic active ingredients commonly encountered.

WE believe that a great amount of work has been done to investigate the performance of aluminum with aerosol products. Only a small proportion of the results of such work has been offered generally. A few excellent papers have been presented before the Aerosol Division of CSMA on important specific aspects either directly or incidentally concerned with aluminum. Included among the authors are: H. M. Parmlee and R. C. Downing (1), M. J. Root (2), R. A. Fulton (3), A. Taranger (4), J. M. Jackson (5), and P. A. Sanders (6). Most recently, C. W. West (7) has pointed up the important factors affecting the corrosion performance of metal aerosol containers and G. F. Hanna (8) had discussed the important elements of applying protective coatings.

This is by no means a complete bibliography but it will suffice to direct attention to a convenient source of excellent reference material on how aluminum cans are made, where they are being used, some corrosion hazards and how they may be understood and avoided.

The present work was prompted by the fact often expressed that there were many years of commercial experience behind the steel can. Such past experience guided fillers in forming an intelligent opinion concerning the probable behaviour of a newly proposed formulation towards its tinplate container. There is no similar experience to guide the "would be user" of an aluminum can.

Our work, planned in a couple of weeks, carried out over a six months period cannot substitute for long term commercial experience. At best, it may erect a few guide posts. We have often wondered if there may be some "families of formulations" which can be packed in "bare" aluminum cans. The purpose of the effort was to determine if this is so. A second purpose, or hope, was that some detail of our work might spark an idea for someone else to explore with a view to reducing package cost through the elimination of an inside coating.

Description of Materials

(a) *Cans:* The aluminum cans were of the two-ounce Peerless* type, impact extruded and necked to the standard one inch opening using lubricants which did not contain any metallic salts, thereby eliminating a potential cause of galvanically induced corrosion.

The only "pretreatment" given these cans was an immersion wash in a hot halogenated hydrocarbon solvent. The cans were made about two weeks prior to packing.

(b) *Valves:* Lacquered tinplate cups and lacquered aluminum cups** were both used to provide some indication of the comparative resistance of the two standard cups to the various chemicals. The aluminum cups are normally lacquered because they are of a stronger alloy than the can body and hence could induce some degree of galvanic corrosion if uncoated.

(c) *Chemicals:* The chemicals used were all of commercial grade. No effort was made to reduce the water contents of the commercial products; on the other hand reasonable care was exercised to avoid an inordinate moisture pickup. Hence, when reference is made to an "anhydrous" formulation the connotation is "commercially anhydrous."

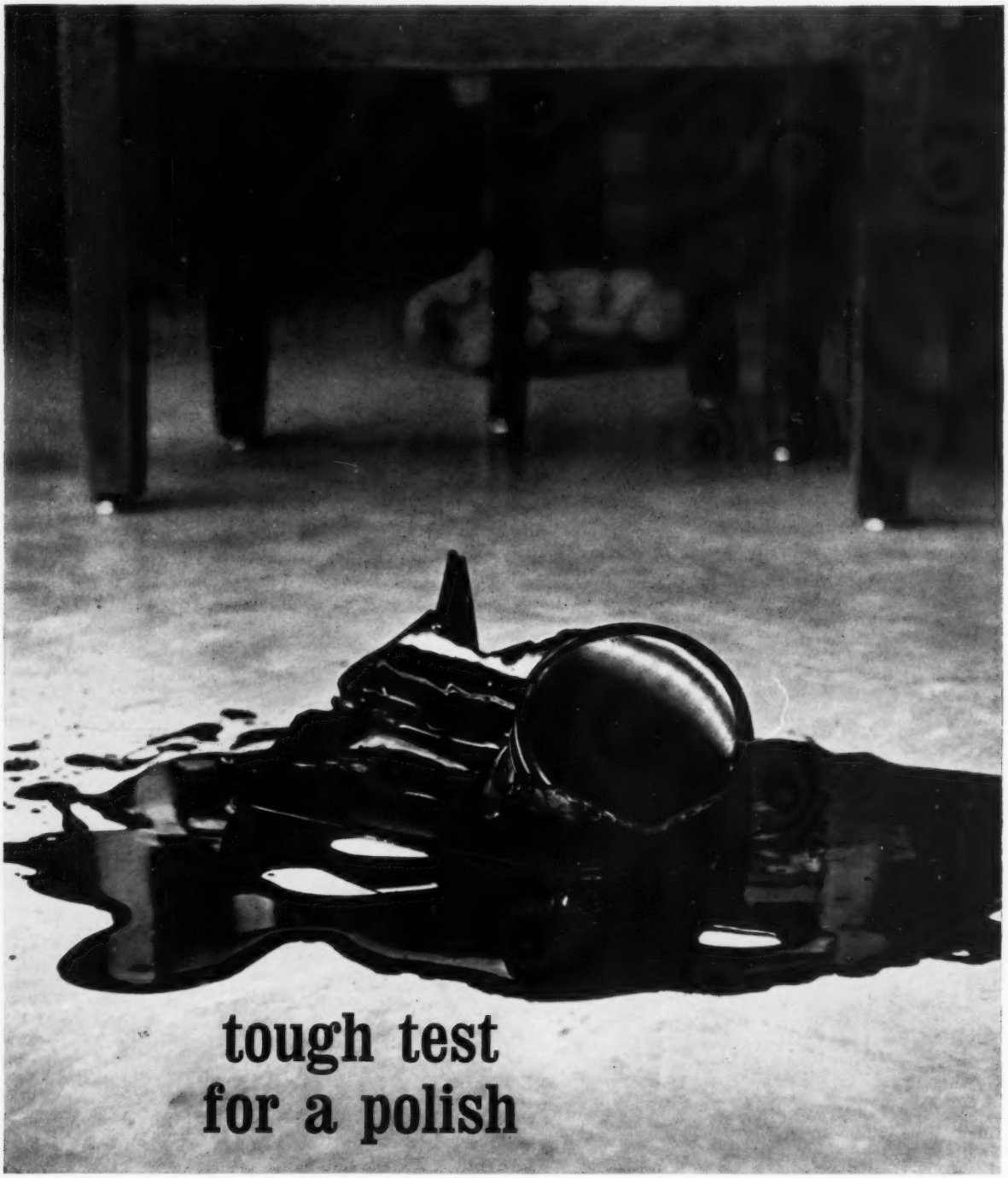
Where deliberate water additions were made, distilled water was used.

Table 1 presents in tabular

*Paper presented during 47th midyear meeting, Chemical Specialties Manufacturers Assn., Chicago, May 17, 1961.

* Supplied by Modern Containers, Ltd., Toronto, Canada.

** Supplied by Precision Valve Corp., Yonkers, N. Y.



Does your floor polish meet the special demands of the fast-growing school market? Durez® terpene phenolic resins and alkali-soluble resins can give your formulations all the important properties they should have . . . at low cost. As a bonus, our 37 years of experience can help you get the right combination of qualities for very special formulas . . . Put our experience to use by writing or calling us.

DUREZ PLASTICS DIVISION

HOOKER CHEMICAL CORPORATION, 407 WALCK ROAD, NORTH TONAWANDA, N. Y.

HOOKER CHEMICALS PLASTICS

Table 1. Chemicals Packed In Uncoated Aluminum Cans

Basic Formulation				Water Additions
Chemical		Propellant		
Name	%	Name	%	
Methylene chloride	100	—	—	0,500 PPM, 1000 PPM, 1.0%
Methylene chloride	40	11/12	36/24	0,500 PPM, 1000 PPM, 1.0%
Methylene chloride	40	11/12/114	36/2.4/21.6	0,500 PPM, 1000 PPM, 1.0%
——	—	11/12	80/20	0,0.5%
——	—	11/12/114	80/2/18	0,0.5%
Chlorothene	75	12	25	0,500 PPM, 1000 PPM, 0.5%
Distilled water	100	Nitrogen (100 PSI)		
Distilled water	100	Nitrogen Oxide (100 PSI)		
Distilled water	100	Carbon dioxide (100 PSI)		
Distilled water	80	12	20	
Proprietary polish[1]	77	Isobutane	23	
Ethanol	75	12	25	0, 1.0%, 10.0%
Isopropanol	75	12	25	0, 0.2%, 1.0%, 10.0%
Odorless mineral spirits	30	11/12	35/35	0
Odorless mineral spirits	30	11/12/114	35/3.5/31.5	0, 1000 PPM
Anionic surfactant[2]	90	12	10	
Cationic surfactant[2]	90	12	10	
Nonionic[2] surfactant	90	12	10	
PVP/ethanol[3]	4.3/95.7	—	—	0
PVP-VA/ethanol[4]	4.3/95.7	—	—	0
Shellac (unbleached)/ethanol	4.3/95.7	—	—	0
Cetyl alcohol/ethanol	1.1/98.9	—	—	0
Propylene glycol/isopropanol	50/50	—	—	0
Triethylene glycol/isopropanol	50/50	—	—	
Pyrethrum/O.M.S.[5]	10/90	—	—	200 PPM, 0.5%
Piperonyl Butoxide/O.M.S.	10/90	—	—	200 PPM
Perthane/O.M.S.	10/90	—	—	200 PPM, 0.5%
Strobane/O.M.S.	10/90	—	—	200 PPM
Thanite/O.M.S.	10/90	—	—	200 PPM
DDT/methylene chloride	10/90	—	—	200 PPM
Methoxychlor "90" methylene chloride	10/90	—	—	200 PPM

1. Water-based furniture polish with air and without air
2. Solution of 3% surface active agent in distilled water
3. Polyvinylpyrrolidone in solution in ethanol.
4. Polyvinylpyrrolidone-vinyl acetate in solution in ethanol.
5. 20% pyrethrum extract in odorless mineral spirits.

form the details of the "formulations."

1. Methylene chloride alone and in combination with propellants 11, 12 and 114 was studied in the anhydrous and "wet" states.

2. Chlorothene was pressurized with propellant 12 and wetted to various degrees.

3. Distilled water was pressurized with nitrogen, nitrous oxide, carbon dioxide and propellant 12.

4. A proprietary water based product was pressurized with isobutane in the presence and absence of air.

5, 6. Two alcohols, pressurized with propellant 12, and containing various water additions were examined.

7. Odorless mineral spirits were pressurized with two propellant mixtures.

8. Surface active agents in water solution were pressurized with propellant 12.

A number of active ingredients were studied in their appropriate solvents without any propellants. These include PVP, PVP/VA, shellac, cetyl alcohol, glycols and several insecticides.

Operating Procedure

Thirty cans were filled with each of the formulations under laboratory conditions. They were all filled from a bulk mix to insure uniform compositions among all cans. Propellant 12 was added from a pressure burette.

All formulations were purged of air by a jet of propellant 12. The air was not purged from the distilled water packs.

Twenty five cans of each pack were sealed with lacquered tinplate cups; five cans were sealed with lacquered aluminum cups. Twenty cans with tinplate cups and five with the aluminum cups were stored horizontally in an oven at 100°F. Five cans with tinplate cups were stored horizontally at room temperature (68-72°F). The horizontal position of storage was chosen to permit observation of corrosion of the body and valve cup in both liquid and vapor phases.

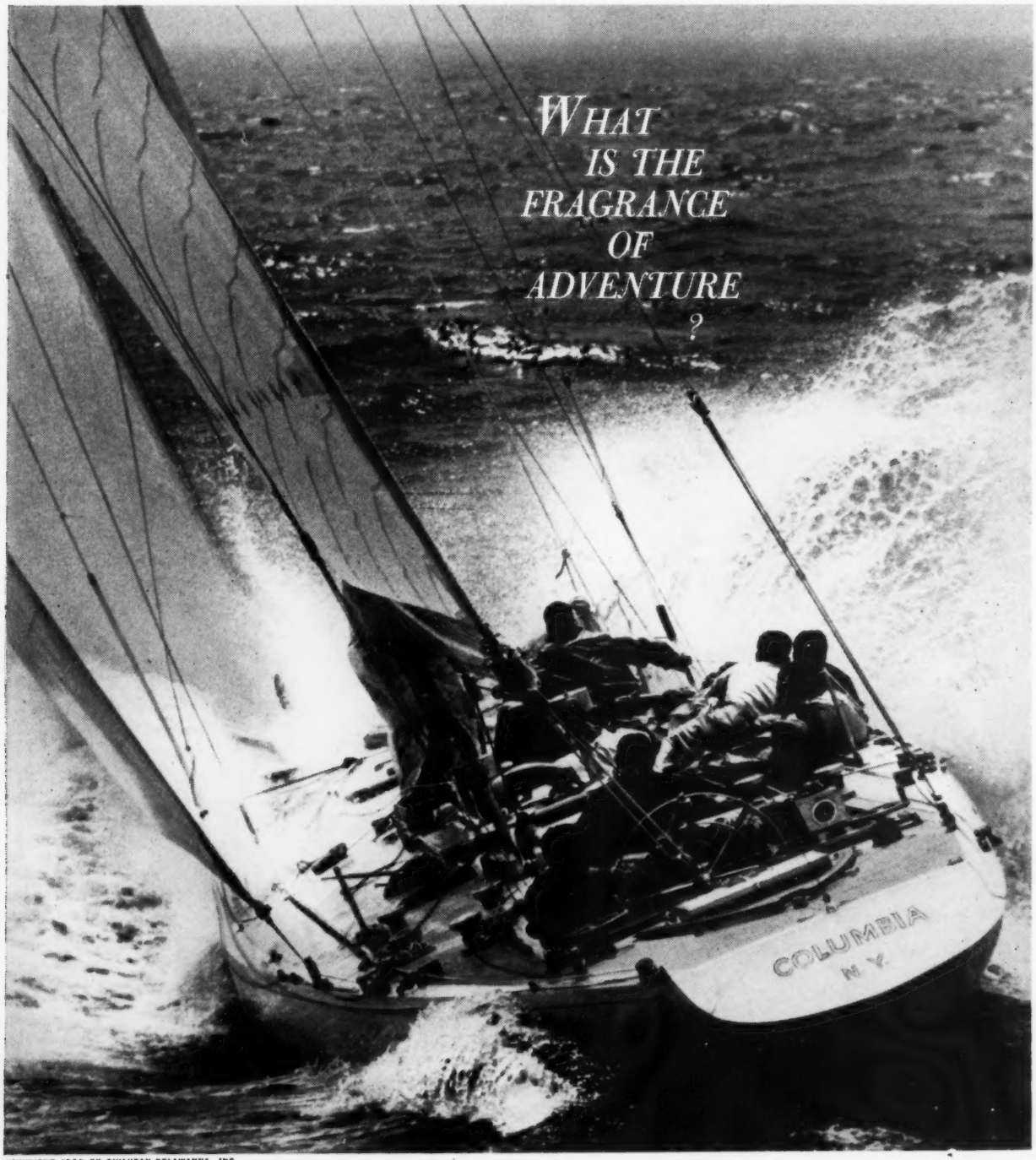
The schedule of opening and examination was five cans of each formulation with tinplate valve cups after 100°F. storage for seven days, 30 days, 100 days and 200 days; five cans of each formulation with aluminum cups after 100°F. storage for 200 days. Samples stored at room temperature were examined also after 200 days of storage.

The results are all visual. No weight loss of the container or aluminum pickup by the formulation was measured.

On the basis of experience, it is possible to estimate, after a

For some it is this: swell of sea, sweep of sky, sting of salt, boom of spray, and the sleek hull winging...a man's game in a fearnaught world. For others no less quick or bold, adventure comes in other challenges to mind and muscle. But to each of us, it carries its own cargo of sights and sounds and smells that move us and quicken our heartbeats in response and recognition. If you seek to pluck adventure from the air and put it in a flask or flacon, Givaudan can help you. No one knows more about the uses of fragrance, or its ever-changing fashions. And no one has helped so many searchers for a special, unique fragrance find their perfect answer. Givaudan-Delawanna, Inc., 321 West 44th St., New York 36

GIVAUDAN
First in the world of fragrance



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period as short as one to four weeks, the long term performance of aluminum in various media or environments. This estimation is based particularly on the type of corrosion. There are forms of corrosion which are dangerous from the standpoints of perforation or generation of quantities of hydrogen. There are other forms which, while probably objectionable from certain standpoints, are not likely to cause can failure over long use periods. These types of corrosion are described in general terms.

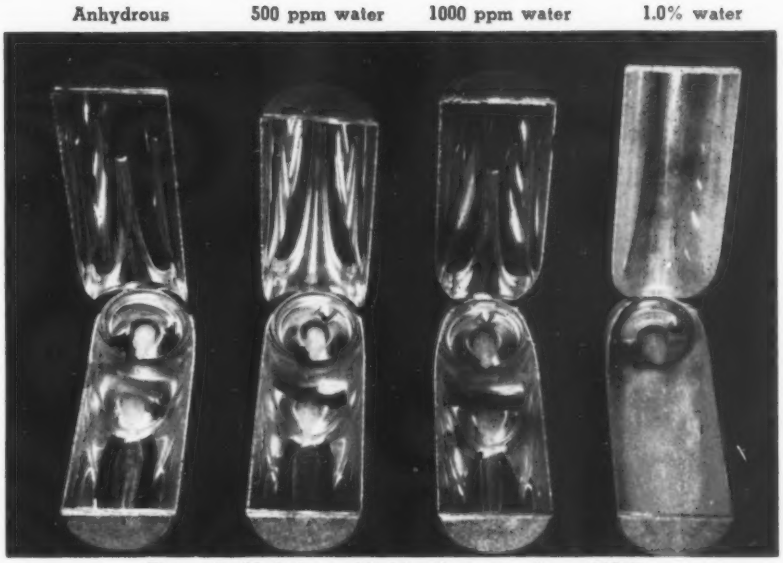

Figure 1. Methylene chloride—three months at 100°F.

Corrosion Terms Defined

(1) *Staining* is a convenient term to indicate a discoloration of the aluminum. This implies no removal of metal and may actually be associated with an increased resistance to chemical attack. The surface lustre of the metal may be retained.

(2) *Light general corrosion* implies a uniform, non-localized type of chemical attack. The corrosion product is firmly adhered and present in a thin layer. The surface of the metal is dulled. Very litle, if any, of the corrosion product will have become dislodged from the can surface, and may, in effect, create a protective layer.

(3) *Heavy general corrosion* is a uniform, non-localized type of attack. A large amount of corrosion product is produced and this is likely to adhere loosely and, therefore, contaminates the product and causes valve blockage. This type of attack will generate a large volume of hydrogen—one milligram of aluminum will produce one cubic centimeter of hydrogen. An inordinate pressure buildup can cause an explosive can failure.

(4) *Wide shallow etching* is a non-uniform, localized type of attack, electrochemical in nature through the establishment of a hydrogen concentration cell. This type of corrosive attack is much less likely to cause failure through pitting perforation than the narrow deep type of pitting attack.

(5) *Narrow, deep, straight-walled* pitting is potentially the most dangerous type of attack. Pits may penetrate rapidly to cause perforation, although the rate of pit growth usually decreases with time.

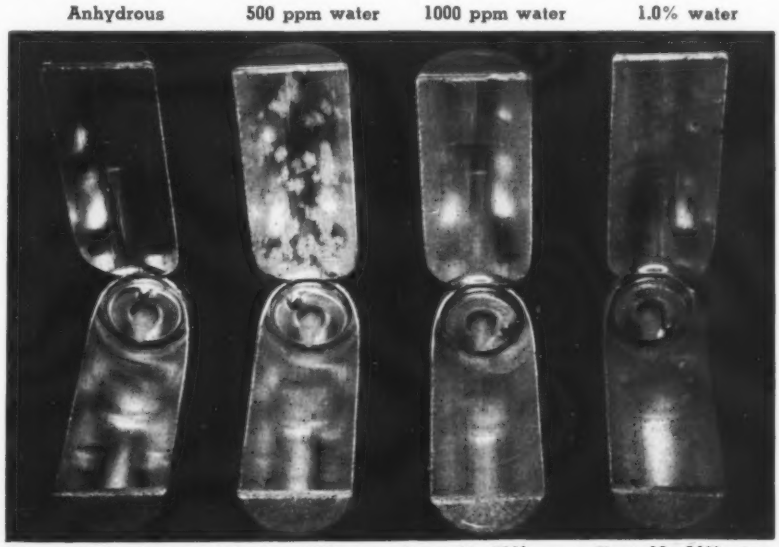

Figure 2. Methylene chloride, 40%; propellant 11, 36%; propellant 12, 24%—two months at 100°F.

Storage Tests Results

Methylene chloride (see Figure 1) by itself or with a moisture content up to 500 parts per million has shown no attack on the aluminum cans. Greater amounts of water developed a tendency to a general type of attack, stronger in the vapor than the liquid phase; these greater amounts of water caused corrosion to start earlier and made it more severe. Both tinplate and aluminum lacquered cups were corroded.

The addition of propellants (see Figure 2) to methylene chloride reduced the tolerance for water but the commercially anhydrous formulation produced no corrosion of can or cup within six months of hot or room temperature storage.

These favorable results with methylene chloride dispel some earlier misgivings concerning its effect on aluminum.

The propellant mixtures 11/12 and 11/12/114, without any

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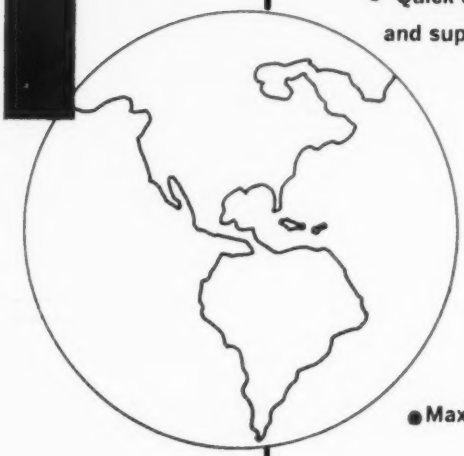

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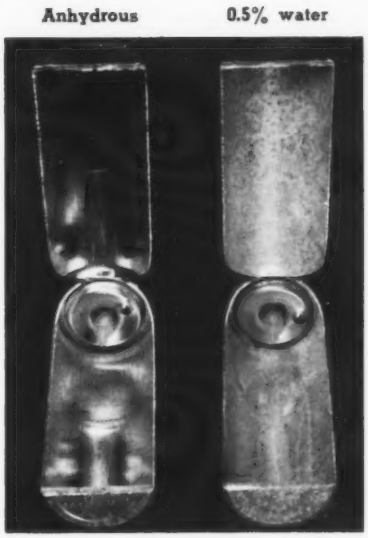

Figure 3. Propellant 11, 80%; propellant 12, 20%—three months at 100°F.

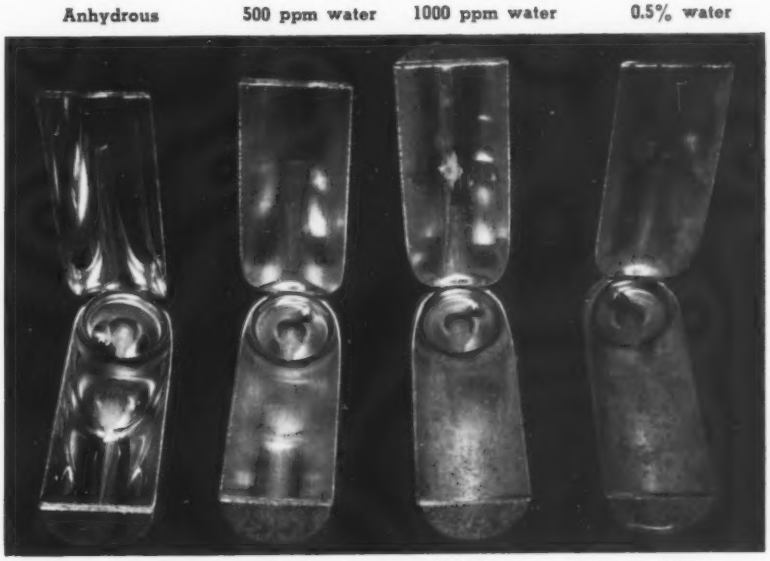

Figure 4. Chlorothene, 75%, propellant 12, 25%—two months at 100°F.

additions, (see Figure 3) did not cause attack of the aluminum in the commercially anhydrous state. The addition of 0.5% water caused wide shallow etching after one week at 100°F., but did not cause any perforation within the six months' storage at room temperature or 100°F.

The chlorothene-propellant 12 mixture in the commercially anhydrous state (see Figure 4) caused no attack of can or cup within the storage period. The tendency towards corrosion appears to vary directly with increasing water content; the type of attack is that of broad shallow etching. No can failure occurred. Only the commercially anhydrous state should be considered as satisfactory for packing tests with aluminum.

Distilled water, packed with compressed gases, showed carbon dioxide to be the only satisfactory propellant (see Figure 5). Nitrogen and nitrogen oxide caused heavy general corrosion and a serious pressure build-up in the cans due to generation of hydrogen. Carbon dioxide as a propellant caused only a very light staining which, as described previously, represents no attack on the aluminum. Figure 5 pictures this series after one month's hot store; there was no change in the CO_2 pro-

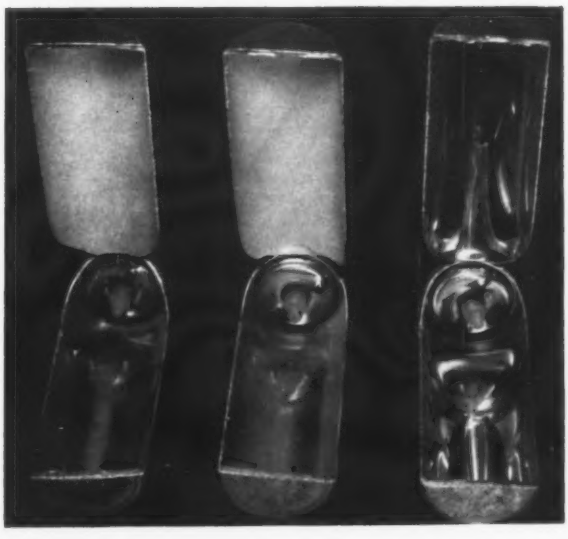

Figure 5. Distilled water—one month at 100°F.

Figure 6. Distilled water, 80%; propellant 12, 20%—one month at 100°F.

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pelled pack after six months' hot store.

Distilled water packed with propellant 12 caused corrosion to perforation within three months in hot store. Figure 6 illustrates corrosion after one month. This type of pack is definitely unkind to aluminum and dangerous.

The water based proprietary polish propelled with isobutane is believed to represent a satisfactory pack in bare aluminum. Some slight tendency to very superficial etching or staining was shown after one month of hot storage, but the degree of attack did not increase with longer storage time. There was no difference between the packs which included air and those which excluded air. Aluminum cups are preferred to the tinplate cups which rusted appreciably. Although a generalization is not justified, it is submitted that water based products propelled with L.P. gases may be worthy of further investigation for packing in bare aluminum cans.

The ethanol-propellant 12 series displayed, as was anticipated, an erratic behavior towards aluminum.

The commercially anhydrous condition (by measurement 2800 - 3800 ppm water) after one week's hot store produced examples of absolutely no corrosion and of severe general attack leading to perforation. These two extremes were found after all examination periods.

The one per cent water addition eliminated the general attack completely, but permitted a slight tendency to very few narrow, straight-walled pits of shallow depth. No cans perforated. Some cans had suffered no attack.

The 10% water addition caused a degree of pitting attack significantly more severe than that of the one per cent water addition, but did not cause perforation. A tendency to mottled dark staining was noted with this 10% water series; the stain became darker as the storage time increased.

The erratic behavior of the commercially anhydrous pack was suspected to be attributed to a water content critically close to that which inhibits the violent reaction associated with anhydrous alcohol-aluminum combinations. A new series of ethanol-propellant 12 solutions was prepared with determined water contents of 77 ppm, 0.56%, 0.92%, 1.21%, 1.66%, 2.76%, 4.81% and 9.87%. These packs were made in bare aluminum cans and in glass bottles with aluminum coupons.

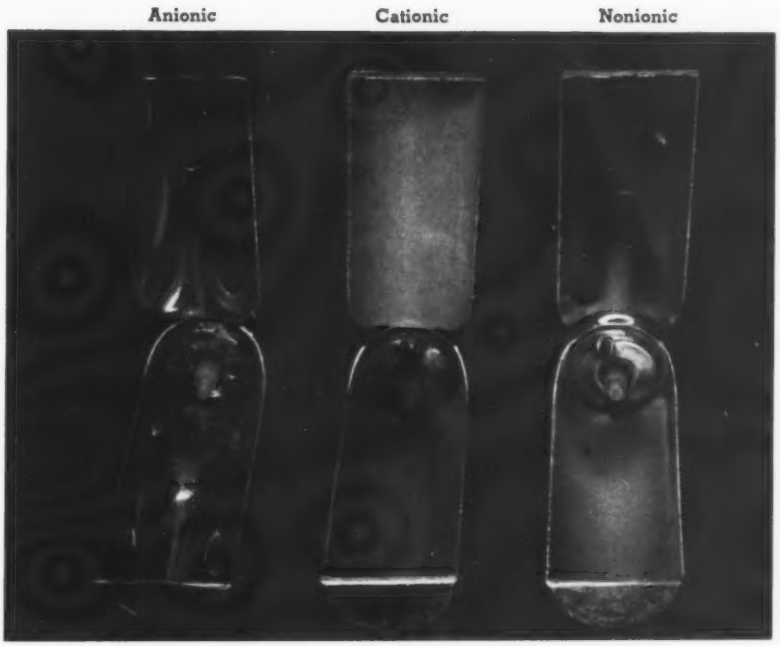

Figure 7. Surface active agents—three months at 100°F.

Within two weeks' storage all the solution containing 77 ppm water caused the cans to explode or to perforate and lose their contents. The attack was of the general severe type.

After two months' storage none of the cans with the greater quantities of water showed serious corrosion. The addition of 0.56% water eliminated the severe general attack and, in a few cans, produced two or three shallow pits of the type and "worm-like" shape reported by Root in his 1955 paper. This same amount and type of corrosion was observed in the packs containing up to 2.76% water.

The higher water contents, namely, 4.81% and 9.87%, produced the same type of shallow straight walled pits as the lower water contents, but the pits were more numerous. It is of interest that these pits contained a black deposit which, with aluminum, indicates that pit growth is greatly retarded or stopped.

It is important to note that the coupons in the glass bottles with the 77 ppm water content solution suffered no corrosion whatever. No explanation of this phenomenon is attempted at the present time, but it is submitted that coupon testing may not always be a satisfactory alternative to package testing. Factors which may be relevant are the thickness of the natural oxide film and the ratio of surface area to solution volume. Both cans and coupons were prepared by a simple degreasing operation.

One of the conclusions presented in Mr. Sanders' paper of last year is quoted – "In the absence of free radical initiators trichloromonofluoromethane and ethyl alcohol do not react." On this basis it may be hypothesized that on the can surface there was an initiator. This may have been residual on the can body, that is, from the

(*Turn to Page* 163)

DUAL PURPOSE
KP-140
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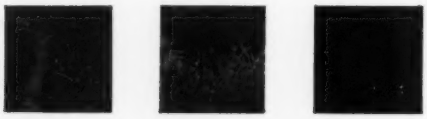

Two test strips on black rubber tile show "drawing in" and crazing in floor polish films which do not contain KP-140. Tile on right shows same formulation with KP-140 added.

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Proper leveling with KP-140 insures evenness of gloss. Photo courtesy of Robbins Floor Products Inc.

European Polish Industry

European and American polish formulation differ because of differences in climate, buying habits, and also living standards

By Dr. Wolfgang Sapper,* Farbwerke Hoechst, A.G.
Gersthofen, W. Germany

SINCE Europe is not a uniform economic structure, it is important to bear in mind that consumer habits vary from country to country. The great variety of European traditions and climates has played an important part in the differences in national standards of living. Because of this variation, it is practically impossible to consider the European polish industry as a single field or to quote figures relating to the entire area.

However, the European polish industry does show certain peculiarities not found in the U. S.

First, the products of the European polish industry and particularly those which may differ in quality from American products will be reviewed. Subsequently, some raw materials important to the European polish industry will be discussed. Finally, European and North American formulating methods will be compared. Basically, the same types of polishes exist in Europe and the U. S. A. We refer to floor polishes, mostly anionic and non-ionic self-polishing emulsions, pastes based on solvents and liquid solvents. A small, but growing product in Europe, as in America, is the water emulsion paste polish. A second important segment of the polish industry is shoe and leather polishes. Here, mostly pastes on a solvent and emulsion base are used. Liquid emulsions play only a minor role for use on sensitive types of leather.

Car, furniture and metal polishes are also used extensively.

Floor polishes of the self-polishing emulsion type are not used as widely in European countries as in the U. S. However, in Western Europe, there is a remarkable increase in the use of these emulsions. While in East European countries, this type of polish is still rather unpopular.

In all countries where self-polishing emulsions have been successfully introduced, a correlation is noticeable in this use and the growing popularity of flooring materials sensitive to solvents – vinyl, vinyl asbestos, asphalt, etc.

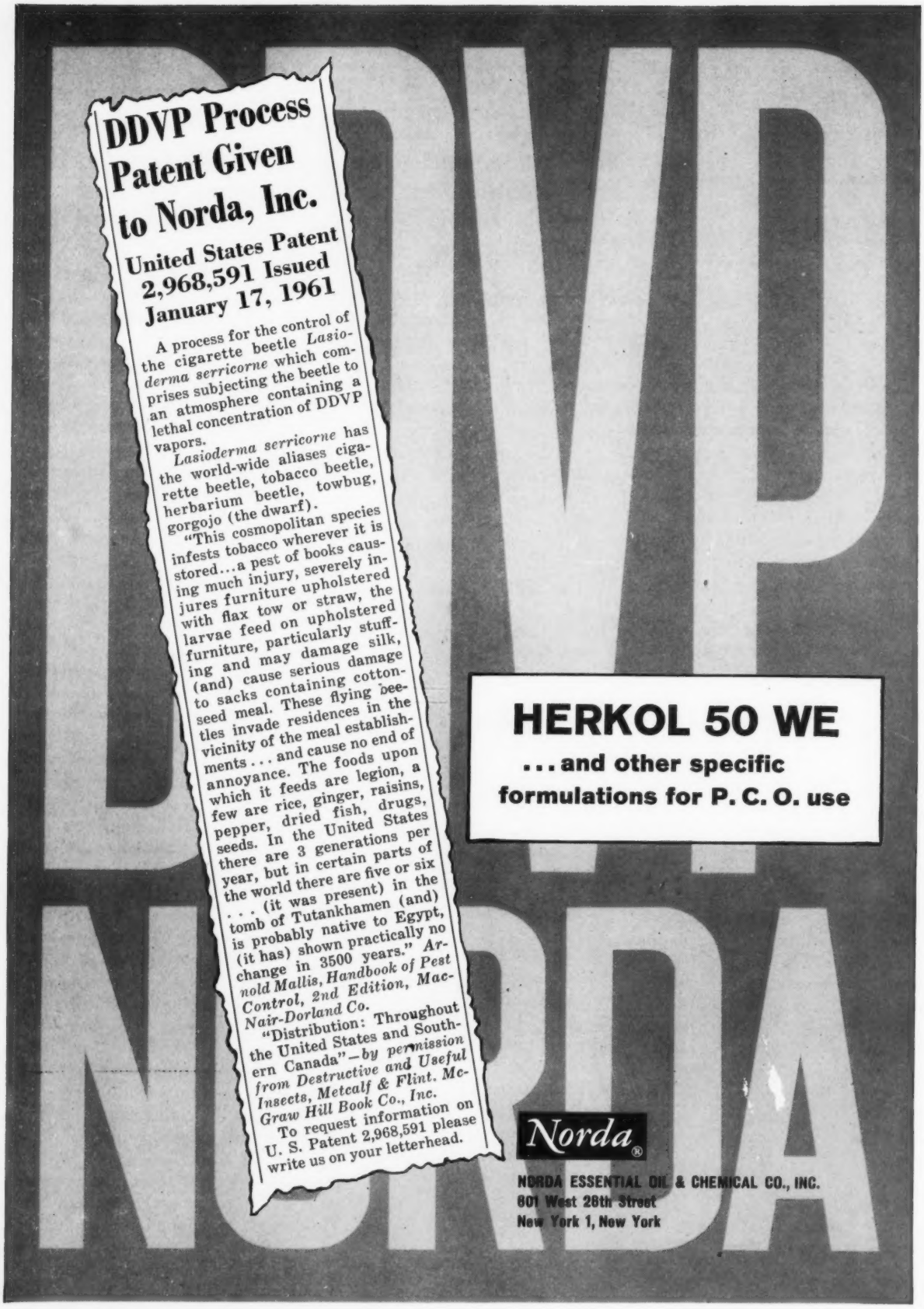
In no European country, however, do self-polishing emulsions possess such a major share of the entire floor polish field as in the U. S. A. Regarding the dry-bright field, great differences between Europe and the U. S. A. can be found both in respect to quantity and quality. Immediately after World War II, when anionic carnauba wax emulsions had become quite popular in the U. S. A., this type of emulsion was practically unknown in Europe. Generally speaking, self-polishing emulsions were produced only on a small scale at that time in Europe.

But the picture changed when two big German wax manufacturers started recommending ester waxes based on crude montan wax for the production of dry-bright emulsions. These waxes, in combination with nonionic emulsifying agents, could easily be processed to high gloss self-polishing systems. It should be added that ethylene oxide, on which these nonionic emulsifiers are based, was readily available. Accordingly, the nonionic emulsion type did attain a certain popularity shortly.

However, initially these emulsions still showed some disadvantages. Spreading and wetting were insufficient, water resistance after 48 hours was bad and wearing properties were not outstanding. A further disadvantage was the danger of corrosion when shipped in iron containers since this type of emulsion was slightly on the acid side. Another problem was mold growth.

But time and research went on and these disadvantages were overcome. The problem of wetting and spreading was satisfactorily solved with the introduction of a new nonionic wax emulsifier, namely, "Wax Emulsifier 2106," as manufactured by Farbwerke Hoechst. Insufficient water resistance and wearing properties were greatly improved with the use of a PVA dispersion, namely, "Mowilith DV CA., 50%" also manufactured by Farbwerke Hoechst. Later on, it was found that by adding small amounts of acrylic dispersions, water spot resistance improved still further. The problem

* Paper presented at 47th midyear meeting, Chemical Specialties Manufacturers Assn., Chicago, May 16, 1961.


DDVP Process Patent Given to Norda, Inc.
United States Patent 2,968,591 Issued January 17, 1961
A process for the control of the cigarette beetle *Lasioderma serricorne* which comprises subjecting the beetle to an atmosphere containing a lethal concentration of DDVP vapors.
Lasioderma serricorne has the world-wide aliases cigarette beetle, tobacco beetle, herbarium beetle, towbug, gorgojo (the dwarf).
"This cosmopolitan species infests tobacco wherever it is stored...a pest of books causing much injury, severely injures furniture upholstered with flax tow or straw, the larvae feed on upholstered furniture, particularly stuffing and may damage silk, (and) cause serious damage to sacks containing cottonseed meal. These flying beetles invade residences in the vicinity of the meal establishments... and cause no end of annoyance. The foods upon which it feeds are legion, a few are rice, ginger, raisins, pepper, dried fish, drugs, seeds. In the United States there are 3 generations per year, but in certain parts of the world there are five or six ... (it was present) in the tomb of Tutankhamen (and) is probably native to Egypt, (it has) shown practically no change in 3500 years." *Arnold Mallis, Handbook of Pest Control, 2nd Edition, MacNair-Dorland Co.*
"Distribution: Throughout the United States and Southern Canada"—*by permission from Destructive and Useful Insects, Metcalf & Flint. McGraw Hill Book Co., Inc.*
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of possible corrosion was met by adding small amounts of sodium nitrite. Chloracetamide or sodium pentachlorphenate was used against mold growth.

Slowly, several of the larger European manufacturers started producing anionic dry-bright emulsions, largely based on carnauba. Meanwhile, the nonionic type had grown so strong that after overcoming the early defects, the competition of anionic emulsions was met successfully.

Nonionic Emulsions

Today, nonionic emulsions play an important role in all countries where dry-bright emulsions are manufactured. They are especially liked because of high self gloss, ease of removability, light color and no tendency toward yellowing. In several countries, such as Finland and France, only nonionics are used and the production of anionic emulsions is insignificant. For most European countries, a certain balance between anionic and nonionic has been established. No radical change of ratio favoring either has been achieved as yet.

Although nonionic emulsions still are largely unknown in the polish field in Europe, further differences between practices in the U. S. and Europe can be found in the proportion of raw materials used for the anionic type.

Europeans prefer high gloss, easily buffable films. Therefore, only small amounts of polymer dispersion are used in anionics. Sweden, generally, has ignored the use of these additives.

Emulsions containing high amounts (more than 50%) of polymer dispersions are employed only in rare cases, mainly with companies working with American formulations. This is particularly true in England.

Floor polishes based on solvents still enjoy greater sales in Europe than in the U. S. A., even where high standards of living prevail.

In several countries, mainly Germany and Austria, the sale of straight solvent paste types of products in cans has decreased in the last few years. This decline has been made up by semi-solid products packed in transparent PVC tubes. The consumer prefers this type of soft product because it can be applied and spread easily. It looks attractive and contents can be seen in the package.

For the production of their semi-paste products, as opposed to hard pastes in cans or tins, wax mixtures with rather weak paste-forming power are used. Waxes in this form do not become hard upon storage. The paste, itself, is put into plastic bags, either at higher temperatures without pressure or at room temperature under pressure. The latter technique is becoming more popular.

Liquid floor polishes based on solvents are gaining more and more popularity in many European countries at the expense of solid pastes. They are well liked and easy to handle.

Also, in the field of shoe polishes, a tendency to softer pastes is noticeable. In most of the European countries, considerably softer pastes are preferred than in the U. S. This is supported by the fact that water emulsion pastes in jars are steadily gaining over straight solvent based products, particularly in Sweden and Switzerland. Some of these are extremely soft and mushy and identified as so-called "shakable" creams.

Semi-paste shoe polishes in transparent packages are not widely known thus far and are only of local importance. Shoe polishes on straight solvent basis are sometimes required to have surface mirror in order to be accepted by the consumer, regardless of the fact that every manufacturer knows that this is simply psychological and without connection to the gloss-giving properties of the buffed film.

The use of dry-bright emulsions as shoe polishes has not been successful in Europe due to the fact that the film cracks after repeated coating because of paraffin content. In spite of the fact that the manufacturer has learned how to avoid this with the use of acrylic dispersions, there are still strong consumer objections to this type of product.

Auto Polish Output

European production of car, furniture and metal polishes is small compared with the output of floor and leather polishes. Formulations resemble those used in America. Aerosol shoe and furniture polishes have so far found no more than limited application. These products are usually loaded with fluorinated hydrocarbon propellants ("Frigen" of Farbwerke Hoechst, equivalent of du Pont's "Freon"). No significant immediate increase is expected in the use of pressurized shoe and furniture polishes. However, the laboratories of the larger polish manufacturers are engaged in extensive development work on these products.

In conclusion, we shall briefly mention the most important waxes and polymer dispersions most commonly used by the European polish industry. Ester waxes based on crude montan (such as manufactured by Hoechst) are leaders among hard waxes. They owe this position to their great versatility which has gained a place for them in all types of polish formulations currently found in the European market.

Waxes derived from the Fischer-Tropsch synthesis are also important polish ingredients, but have found only little use in self-polishing emulsions.

Non-oxidized polyethylene waxes are added in small proportions to solvent based polishes, especially where emphasis is on smooth texture of the paste and temperature stability. Leading among these are "A" wax of BASF, "AC6" of Allied Chemical Corp. and "Epolene N" of Eastman. Hoechst is currently switching from pilot plant to large scale production of a new series of poly-

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B-Square 190 A	190-195	2-7	1½ Max.	Nil	Nil
Petrolite C-1035	195 Min.	3 Max.	1½ Max.	Nil	Nil
Petronauba C	180 Min.	7 Max.	3 Max.	22-28	50-60
Petronauba D	185 Min.	5 Max.	6 Max.	20-28	50-60
Petronauba H	195 Min.	1-3	4 Max.	15-25	50-60
Petrolite C-15	180 Min.	4-6	4-5	15-17	45-55
Petrolite C-23	180 Min.	4-6	4-5	20-15	55-65
Petrolite C-36	180 Min.	5-7	4-6	30-35	75-85
Petrolite PE-100	195-200	2-3	4-6	15-20	45-55
Petrolite R-50	190-200	2 Max.	4½ Max.	40-50	65-80
Petrolite P-20	210-220	2 Max.	3 Max.	Nil	Nil
C-6500	190-210	1-3	4 Max.	10-13	30-40
C-7500	195-215	1-3	2 Max.	10-13	25-30

* *If you don't see what you want, write us, stating the specifications and polish characteristics you require. We'll send you recommendations and/or samples. There's no obligation for this service.*

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ethylene waxes combines the features of the above products.

Microcrystalline waxes of American and German origin are available on the European market. Among hard micro waxes the American products are usually preferred. Soft products of ozokerite-like structure are supplied by the German ceresin industry.

For solvent based polishes "Hoechst Waxes" of the "O" group are widely used. Hoechst Waxes "KSS," "KSE," "KPS," and "VP-115" are popular for dry bright emulsions. Carnauba wax is still important, but on a diminishing scale. Any extension of the carnauba market appears doubtful. Oxidized polyethylene waxes, especially "AC 629," have been introduced successfully and oxidized microcrystallines are gaining in importance.

Crude montan wax is still widely used in the manufacture of black shoe polishes and other dark colored products. However, the biggest outlet for crude montan is, as it always has been, the ester wax production of Farbwerke Hoechst. Hoechst is a large producer of crude montan in West Germany. The output of these facilities is captive and serves as raw material for the waxes manufactured at the Gersthofen plant.

In nonionic self polishing emulsions PVA polymer dispersions are widely used (f.i. "Mowilith DV CA" 50 per cent by Hoechst). Sometimes small additions of acrylics are combined with PVA dispersions. For anionic formulations American polystyrene and acrylic dispersions are gaining acceptance. Most of the leveling resins used in Europe are also of American origin.

Mineral spirits are mainly used in solvent based floor polishes, while mixtures of mineral spirits and gum turpentine are preferred for shoe polishes. Gum turpentine is almost exclusively used by formulators in Italy, Spain, Portugal and Greece.

Some of this general survey of leading European polish types and raw materials will be illustrated by the following European formulations and their American counterparts.

Solvent Paste Polish

European Type—Formula No. 121

parts	
4.0	"Hoechst Wax O"
2.0	Plastic microcrystalline wax about 70°C (158°F) S.P.
22.0	Paraffin wax 60/62°C 140/145°F
72.0	Mineral spirits
100.0	

American Type—Formula No. 305

parts	
4.0	"Hoechst Wax OP"
1.5	"Hoechst Wax VP-115"
2.0	Polyethylene wax (AC6 or Epolene N)
12.5	Paraffin wax M.P. approx. 150°F (i.e. Essowax 5010)
80.0	Mineral spirits
100.0	

The American formula gives a much firmer paste and excellent heat resistance. This is necessary because of the extremes in climate found here. In Europe, we prefer a softer paste with more salve-like properties.

Liquid Solvent Floor Polish

European Type—Formula 149

parts	
3.8	"Hoechst Wax FL"
1.2	"Hoechst Wax O"
1.5	Plastic microcrystalline wax about 70°C (158°F) S.P.
8.5	Paraffin wax 52/54°C (125/130°F)
85.5	Mineral spirits
100.0	

American Type—Formula No. 1133

parts	
1.5	"Hoechst Wax FL"
1.5	"Hoechst Wax O"
1.5	Plastic microcrystalline wax or Polyethylene wax
6.0	Paraffin wax (130/134°F)
89.5	Mineral spirits
100.0	

The American preference is for a full bodied but flowable liquid solvent so called "cleaning polish" with a solids content of 9 to 12%. In Europe, more fluid and high solids content products prevail.

Bright-Drying Upper Leather Polish

Formula No. 796

A

parts	
7.0	"Hoechst Wax KSS"
5.0	Emulsifiable polyethylene wax
1.2	Oleic acid
1.4	AMP
85.4	Water
100.0	Basic emulsion

B

parts	
60.0	Basic emulsion
40.0	"Ubatol 3041" or "Rhoplex B-15"
10.0	of a 15% leveling resin (ammonia cut)
110.0	Finished emulsion

In this case European and American standards are very similar.

Anionic Dry-Bright Emulsions

European Type—Formula No. 545

A

parts	
9.0	"Hoechst Wax KSS"
3.0	Emulsifiable polyethylene wax
1.3	Oleic acid
1.1	AMP
85.6	Water
100.0	Basic emulsion

B

70.0	Basic emulsion
30.0	"Ubatol 2007" (12%)
11.0	of a 12% leveling resin cut
111.0	Final emulsion

American Type—Formula No. 542

A

parts	
6.0	"Hoechst Wax VP-115"
2.0	Microcrystalline wax (M.P. 190°F Min.)
6.0	Emulsifiable polyethylene wax
2.1	Oleic acid
2.9	Morpholine
81.0	Water
100.0	Basic emulsion

B

70.0	Basic emulsion (12 or 16%)
30.0	Acrylic dispersion + KP 140 (12 or 16%)
20.0	Leveling resin cut (12 or 16%)
120.0	Final emulsion

(*Turn to Page* 165)

Brake Fluid and Brake Maintenance

By Stanley W. Coryell and Donald H. Hanson*,

R. M. Hollingshead Corp., Camden, N. J.

Conclusion

IN pedal bleeding, most label instructions suggest inserting free end bleeder hose, attached to bleeder screw of wheel cylinder, into clean container partially filled with clean replacement fluid. With hose thus immersed, cessation of air bubbles into container of fluid when pedal is depressed is assurance of air-free fluid in system at point of being bled. With hose full of fluid and immersed, no air bubbles can form in top of open cylinder when pedal is released. If old fluid in system is being replaced with new fluid, appearance of new fluid at end of bleeder hose is indication that old fluid has all been forced out. This method of bleeding can be done by either one man, or two men, one pumping the pedal, the other working under the car.

We have found in many shops that the container was discarded in favor of venting freely, one mechanic opening and closing the bleeder screw in a synchronous fashion with another mechanic working the brake pedal. Fluid simply squirts out on the floor. Bleeding is rapid, and where observed, sure, but a somewhat messy shop results. The subject of brake bleeding, a simple and established practice, might benefit by some review.

Never Reuse Fluid

Never reuse bled fluid; There would appear to be again, no quarrel with such a salutory principle. Not enough emphasis is placed on this objective, and in the author's opinion, this caution should appear on every brake fluid label.

Complaint causes: Causes for brake fluid complaints are legion. Some may even involve the brake fluid itself, but in our experience, the majority of complaints have to do with misuse, contamination—accidentally or deliberately, carelessness and ignorance. Brake fluids are commonly and unjustly blamed for anything that may go wrong in the brake system. Some common causes we have found include:

Dirty shop practices: Mentioned before in this paper, and a prevalent cause for dissatisfaction. Correction of condition improves service results.

Contamination: We have examined complaint samples and found in the brake fluid pine oil soaps, tire lubricants, shock absorber fluids, corrosion preventive compounds and mineral oils. In one shop, we found the storeroom attendant had mixed a half drum of shock fluid with a half drum of brake fluid. They looked alike, the mixture would have passed for either, and whatever you asked for came out of the same drum. We find frequently a can or pail of fluid, punched and never resealed. A squeeze bulb may be left in the hole, but oil, dirt and water can and often do get into the brake fluid. One complaint sample we examined contained 16.1% of water. The pail had been punched and stored on the floor in the wash rack. Every car wash contributed a little water to the fluid contents. Mileage from the pail was good, but results rather poor. Contamination is the first thing we look for when a complaint arises.

New brake parts: Not common by any means, but sometimes encountered, are problems with parts. One serious case disclosed parts coated with a mineral oil preservative, and distributed through a large chain outlet. The cylinders never rusted, but they wouldn't work either. We have found cups cocked in assemblies and deformed. Burrs and metal chips in new assemblies have also been found. In case of a brake failure complaint, parts need not be a prime suspect, but they should not be overlooked, either.

Foaming of fluid in system: This complaint crops up occasionally. We have been baffled to understand how one determines foaming in the system, and have never been able to prove such foaming and, thus, have no answer for this one.

Sludge and grit leakage: We have covered this ground previously, and this is a very common cause of complaint where leakage occurs soon after the brake system has been disturbed. Where sludge is present in system, partial replacement of fluid, bleeding or disassembly of some components frequently permit sludge and grit to disperse through system and accumulate in cup area where it can prevent proper sealing.

Bleeding and filling aids: Contributing to poor practice, contamination and complaints, many times, are a squeeze bulb, pressure bleeder or other intermediate container. One bleeder, when cut open, had over an inch of sediment with grit and metal chips present in the bottom of the unit. We don't know how this mixture got into the bleeder, but it must

* Paper presented Dec. 7, 1960 during 47th annual meeting, Chemical Specialties Manufacturers Assn., Hollywood, Fla.

have ruined a lot of brake jobs. Containers and bulbs used for water and petroleum products, and indiscriminately for brake fluid, all help to destroy proper brake fluid service.

Flushing of system: This was covered to some extent under fluids recommended for such purposes. We have had many encounters with fluids not recommended. Petroleum solvents and soap solutions are common offenders, and from personal experience we know of several cases in which a radiator flush was used in an attempt to clean the hydraulic system.

In handling complaints, every possible consideration should be given to conditions and factors which might contribute to dissatisfaction or actual brake failure. Stock fluid, brake fluid from system, parts, and shop practices should all be investigated. Proper handling of complaints will point up, more than anything else, the need for education in the use of brake fluid and the servicing of brake systems.

Summary

It is commonly believed that all manufacturers of brake fluid have a complete understanding of the requirements of a good brake fluid, and thoroughly understand service requirements of brake fluids. From the foregoing, it would appear that this might not be true, at least, it is not true for every manufacturer of quality brake fluids. A glance at a few brake fluid labels should convince any skeptics.

If the spark plug gap for the modern automobile can no longer be set within a "thin" dime, then we have also come a long way from the soap and alcohol type brake fluids. But even with the many excellent brake fluids now available, many users of these fluids are still in the soap-and-alcohol days. The attitude is still prevalent that "brake fluid is brake fluid." Good brake fluid labeling might properly be a start towards helping these users, our customers,

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PLURONIC® surfactants:
key chemicals for detergents
Put a Pluronic to work on your worst problem—and watch it solve others as well. These surfactants have defoaming properties, dedusting properties, dispersing, detergency, and wetting properties. They help eliminate staining, streaking, and spotting in machine dishwashing compounds. They're the key chemicals that made rinse aids commercially practical. They're versatile, they're controllable, and you have 22 of them to choose from.
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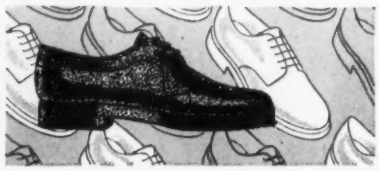
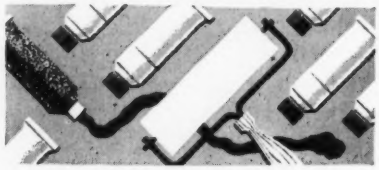
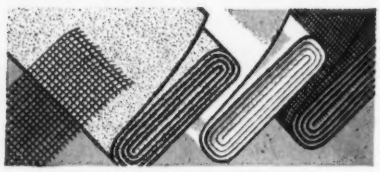


FOR INKS! Promotes excellent pigment binding properties, plus, good adhesion to foils and films.



FOR TEXTILES! Tops for sizes for polyester, polyamide and polyacrylic fibers . . . provides tough, humidity-resistant films.



WANT INFORMATION AND SAMPLES?

Raw Materials For Specialty Chemical Processors

POLYVINYL CHEMICALS

INCORPORATED

26-30 Howley Street, Peabody, Massachusetts

out of the dark ages of automotive hydraulic brake servicing. Some requirements for correct direction copy, as we have seen, appear to be well established. Considerable areas exist in which confusion should be resolved before good service recommendations can be made.

There is still no agreement as to whether a brake fluid should be changed at regular intervals in the interest of preventive maintenance and car owner safety. Some of the data presented would indicate that accumulation of moisture, dirt and grit in the system tend to degrade the fluid and prevent proper operation. More data are needed on flushing and honing, and some agreement as to the desirability of such practices, and, if desirable, best methods for each.

Methods for servicing the system need further exploration if dissatisfaction and premature system failures are to be avoided. Better storage methods for parts and vehicles are indicated. Better education of shop personnel is certainly needed, and such education should include also the ultimate consumer.

Recommendations

From an official statement by the Chemical Specialties Manufacturers Association "What it is and what it does," we quote: "The purpose of the association, briefly, is to aid its members in producing and marketing better products; and to educate the public in the correct and better use of its members' products. . .

It is the authors' opinion, that the need for correct and better use of its members' products is nowhere better exemplified than in the situation now existing with brake fluids. Accordingly, we recommend the following:

1. That the Brake Fluid Sub-Committee, Automotive Division, CSMA, or some similar committee as may be selected, be authorized to ascertain the desirability and practicability of a Brake Maintenance Manual, and that such committee gather and collate information from manufacturers and other sources of best recommended practices for use of brake fluid and brake servicing requirements.

2. That production of such a Brake Maintenance Manual be properly done by the Society of Automotive Engineers, who have made some investigation of this subject. That the CSMA Sub-Committee approach the proper SAE Committee on this subject, and cooperate in such venture where feasible, and where CSMA contribution may be valuable. And that the CSMA jointly sponsor with the SAE, such a program if the SAE would desire such a joint sponsorship with mutual contribution.

3. And that the CSMA through proper association channels originate and prepare a series of publicity releases concerning proper use of brake fluid and proper brake maintenance, and that such releases be given to newspapers and magazines where appropriate, so that the public and other consumers be made properly aware of the importance of brake fluid, and CSMA sponsored State legislation passed for their safety.

It is the opinion of the authors that a Brake Maintenance Manual is desirable and greatly needed and will be needed more so in the near future. Publicity releases may be the most practical means to inform all concerned about brake fluids, and is within the means of the association. The authors would be willing to assist and contribute in any way deemed advisable by any appointed Committees.■

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1. Wagner Brake Maintenance Manual
2. Eis Repair Kit Instructions, Form No. 408
3. Eis Super 703 Heavy Duty Brake Fluid
4. "Trends in Brake Fluid Temperatures," Tiffany, Rodger and Markey, March 6, 1956.
5. "Effect of Water in Automotive Brake Systems," Sharrard-Hanson, December 4, 1956

6. "The Importance of Heavy Duty Brake Fluid to Safe Motoring," Markey, December 4, 1956
7. VV-H-910, Federal Heavy Duty Brake Fluid Specification
8. 70R3, SAE Heavy Duty Brake Fluid Specification
9. PB 161096, "Development of an Operational Preservative Hydraulic Brake Fluid," United States Department of Commerce, Report No. CCI #81, August 26, 1959

Insecticide Marketing

(*From Page* 70)

food supply inside a building. Trace this route and dust."

Now this is very interesting to the consumer, so it is a step in the right direction. But why is it better to use the Black Flag Dust than the Black Flag Ant and Roach Killer Spray? When is it better to use one and when the other? Is the dust a food that the ants take back like our old friend Antrol? Or should the ants be expected to die as soon as they come in contact with the dust? The consumer has no way of knowing.

(*To be concluded*)

—★—

Shanco Leveling Agent

Shanco Plastics & Chemicals, Inc., Tonawanda, N. Y., recently introduced its "L-1159," a new leveling agent said to be of good color and wear resistance.

"Shanco L-1159," a pale, high melting, alkali-soluble resin for use in bright drying floor waxes and polishes, is claimed by the maker to produce a film of excellent clarity and brilliance, is resistant to water spotting and makes removable films. Product is said to perform well in all emulsion systems and is well suited for use with acrylic and styrene emulsions.

Hazardous Substances

(*From Page* 74)

midyear meeting of CSMA. A number of containers were displayed showing current labeling practices of different CSMA members. I believe to be safe in stating that there is not one label on dis-

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LIQUID
FLAKE
22
PASTE
PLURONIC® surfactants:
key chemicals in all forms
There's a Pluronic to match the form of your product—liquid, paste, or flake. There's a Pluronic to suppress the sudsing of your product—to almost any degree you wish. There's a Pluronic to control the grease removal properties of your product. The point: Wyandotte offers, altogether, 22 Pluronic polyols, and the chances are better than good that you'll find among them exactly the surfactant you need. Have you looked into them?
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and new manual on foam control

first in silicones
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Dept. A119

Please rush a FREE SAMPLE of a Dow Corning silicone defoamer for my product or process, which is (indicate if food, aqueous, oil or other): _____

NAME _____

POSITION _____

COMPANY _____

ADDRESS _____

play which would meet all of the requirements of the proposed regulations. This means, of course, that if these regulations should be adopted in their present form, virtually every label on the container of every household substance on the market would require some more or less radical change in order to be in full compliance.

It is the intent of the Precautionary Labeling Committee to further the long-standing policy of this Association in promoting sound, effective, precautionary labeling in the public interest, and for the sake of greater safety in the use of hazardous household products. With this as a background, the Chemical Specialties Manufacturers' Association has approached the Food and Drug Administration in an effort to persuade this authority that history and experience in this field should not be disregarded in favor of a set of mandatory labeling requirements, which we believe to be contrary to the purposes of Public Law 86-613.■

Soaper Diversifies

(*From Page* 48)

Today, East Coast is headed by Charles Hulnick who, in his capacity as president, is in charge of all product development. Since 1937, when he began spending a half day selling and a half day in the office, Mr. Rudman has been connected with sales and today is director of sales in addition to being secretary of the corporation.

Both Mr. Hulnick and Mr. Rudman predict larger sales for the future, stating that the recent business slump did not affect their sales. Demands for high quality products continued despite the drop-off in general business conditions and demands for further product diversification by the industrial customers of East Coast indicate that the firm has a considerable future in the rapidly growing sanitary supply field.

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agents or combinations employing the help of a solubilizing agent, instead of neutralizing with triethanolamine.

It must be kept in mind that this article refers throughout to detergents in general and liquid detergents in particular and, therefore, there would be other applications in which the additional cost of neutralizing alkyl benzene sulphonic acid with triethanolamine would definitely be justified.

The product made from morpholine is, as can be seen from the preceding data, by far the least efficient and most expensive of the lot, and therefore warrants no further discussion. It may be added, however, that morpholine is employed in considerable quantities to neutralize various fatty acids to be used as emulsifying agents in certain cosmetic preparations.

The final property of the 14 products that were studied, was wetting time. Wetting properties are exceptionally important as far as a liquid dishwashing detergent is concerned, as the removal of the soil from the dishes is mainly brought about by the fact that the surface of the plate is "wet" by the detergent. This means that the interfacial tension between the surface of the plate and the soil has been reduced considerably, thus facilitating the removal of the soil. The more the two surfaces are "wet" by the particular detergent, the easier will the soil be removed.

The wetting properties of the 14 different products were determined by the Canvas Disc Wetting Time. The test was carried out as follows: A 0.1% active solution was made up in a 400cc. beaker. A piece of canvas, 1" by 1" was held just above the solution and, as it was dropped into the solution, a stopwatch was started. The wetting time was the time taken before the piece of canvas began to sink.

Table 4 records the wet-

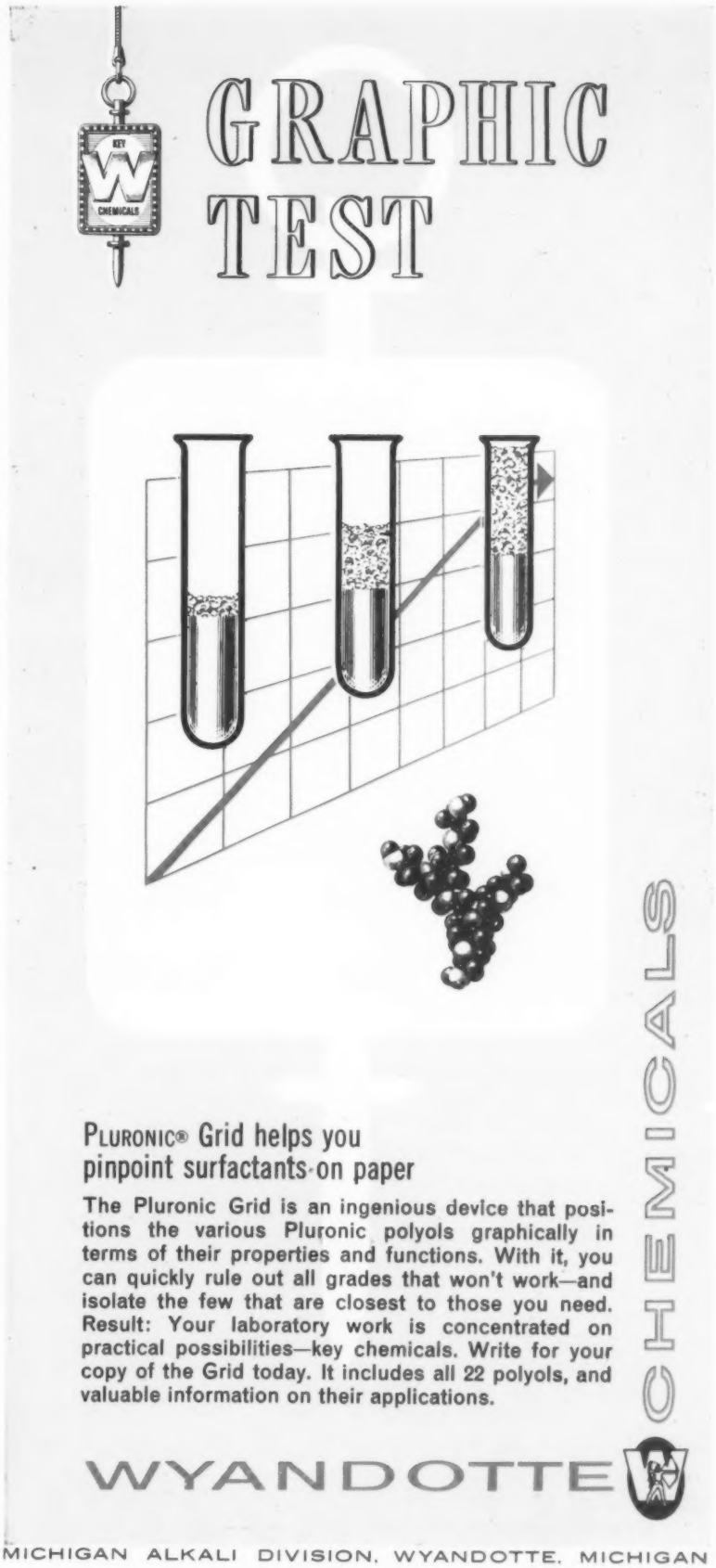
GRAPHIC
TEST
PLURONIC® Grid helps you
pinpoint surfactants on paper
The Pluronic Grid is an ingenious device that positions the various Pluronic polyols graphically in terms of their properties and functions. With it, you can quickly rule out all grades that won't work—and isolate the few that are closest to those you need. Result: Your laboratory work is concentrated on practical possibilities—key chemicals. Write for your copy of the Grid today. It includes all 22 polyols, and valuable information on their applications.
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Table 4.

Product	Wetting time secs.	Product	Wetting time secs.	Product	Wetting time secs.	Product	Wetting time secs.
Na.	16	Mor.	27	$^3/_4$Na/$^1/_4NH_3$	14	$^1/_2NH_3/^1/_2$Tr.	27
NH_3	18	$^3/_4$Na/$^1/_4$Tr.	17	$^1/_2$Na/$^1/_2NH_3$	15	$^1/_4NH_3/^3/_4$Tr.	65
K.	16	$^1/_2$Na/$^1/_2$Tr.	23	$^1/_4$Na/$^3/_4NH_3$	15		
Tr.	40	$^1/_4$Na/$^3/_4$Tr.	33	$^3/_4NH_3/^1/_4$Tr.	30		

ting times of the above 14 products for a 0.1% solution at 26.0 degrees C. The water used was the same as was used for the foam tests, i.e., water of 150 ppm hardness.

Once again, before analyzing Table 4, it will be classified in order, from shortest to longest wetting time.

Classification No. 8.

1). $^3/_4$Na/$^1/_4NH_3$
2). $^1/_2$Na/$^1/_2NH_3$
2). $^1/_4$Na/$^3/_4NH_3$
4). Na.
4). K.
6). $^3/_4$Na/$^1/_4$Tr.
7). NH_3
8). $^1/_2$Na/$^1/_2$Tr.

Table 4 gives conclusive proof of the synergistic effect first discussed in conjunction with the cloud points, and later in conjunction with foam volumes and foam stabilities. The wetting time of sodium alkyl benzene sulphonate is 16 seconds and that of ammonium alkyl benzene sulphonate is 18 seconds. Yet the wetting time of $^3/_4$sodium alkyl benzene sulphonate/$^1/_4$ammonium alkyl benzene sulphonate is 14 seconds; less than either of the separate products.

By careful study of classifications 1 through 8 another extremely interesting feature will be noticed. This is most probably the most interesting feature of all. It is the fact that in each classification, each separate product falls under the same classification number every time. (By the same classification number, the same order of number is meant, i.e., 1, 2 and 3 are considered to be the same.)

This fact, illustrated in Table 5, apart from proving the fact that certain products are far superior to some others for use in liquid detergents, also proves that all of the tests conducted in this survey have a large amount of authenticity.

Table 5 is a table of all of the classification numbers of the 14 products under discussion.

The final stage in this investigation is to classify the results obtained in Table 5, to obtain an overall picture of all the results.

Classification No. 9.

1). $^3/_4$Na/$^1/_4NH_3$
2). Na.
3). $^1/_2$Na/$^1/_2NH_3$
4). $^1/_2$Na/$^1/_2$Tr.
5). NH_3
6). $^3/_4$Na/$^1/_4$Tr.
7). $^1/_4$Na/$^3/_4NH_3$
8). K.
9). $^1/_2NH_3/^1/_2$Tr.
9). Mor.
11). $^3/_4NH_3/^1/_4$Tr.
12). $^1/_4$Na/$^3/_4$Tr.
13). Tr.
14). $^1/_4NH_3/^3/_4$Tr.

This final classification should prove which is the best neutralizing agent for alkyl benzene sulphonic acid for liquid detergents.

This classification exhibits some very interesting features, the most important of all being the fact that for a liquid detergent, caustic soda is *not* the most efficient neutralizing agent for alkyl benzene sulphonic acid. It is definitely overshadowed performance-wise and price-wise by a mixture of $^3/_4$sodium alkyl benzene sulphonate/$^1/_4$ammonium alkyl benzene sulphonate. This, in turn, proves that in certain concentrations, ammonia has a definite synergistic effect on caustic soda as a neutralizing agent for alkyl benzene sulphonic acid.

In conclusion, the author would like to point out, that this study has only overcome the basic problem attached to the formulation of a light duty liquid detergent. The next stages of choosing a suitable solubilizing agent, suitable foam boosters and foam stabilizers, rinsing and drying agents, water softeners, skin protectants and perfumes, would make very interesting subjects for future articles.■

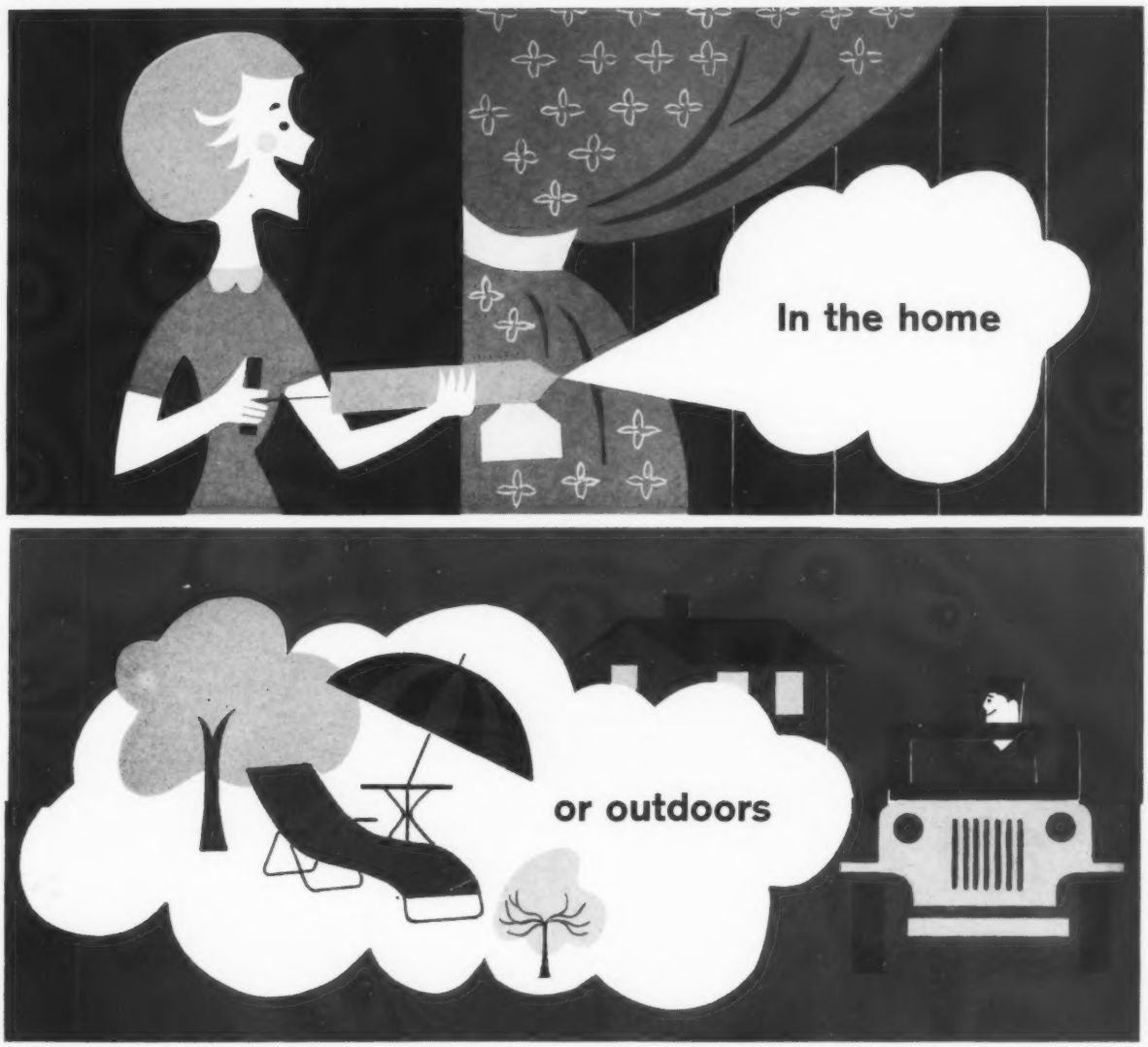
Table 5.

Neutralizing Agent	Classification Number 1.	2.	3.	4.	5.	6.	7.	8.	Average Classification No.
Na.	1	8	4	1	1	1	2	4	2.750
NH_3	5	12	7	6	4	4	4	7	6.125
K.	6	13	2	7	7	8	8	4	6.875
Tr.	13	5	11	13	9	9	14	13	10.875
Mor.	14	14	14	14	11	13	13	9	12.750
$^3/_4$Na/$^1/_4$Tr.	7	6	5	9	5	6	7	6	6.375
$^1/_2$Na/$^1/_2$Tr.	9	3	5	5	5	7	4	6	5.750
$^1/_4$Na/$^3/_4$Tr.	11	1	12	11	13	9	11	12	10.000
$^3/_4$Na/$^1/_4NH_3$	2	7	1	1	2	2	1	1	2.125
$^1/_2$Na/$^1/_2NH_3$	3	10	2	7	3	3	3	2	4.125
$^1/_4$Na/$^3/_4NH_3$	4	11	9	10	7	5	4	2	6.500
$^3/_4NH_3/^1/_4$Tr.	8	9	8	9	5	11	9	11	8.750
$^1/_2NH_3/^1/_2$Tr.	10	4	10	5	9	14	10	9	8.875
$^1/_4NH_3/^3/_4$Tr.	12	2	13	11	14	12	12	14	11.250

—★—

Propylene Glycol Data

A technical brochure on propylene glycol U.S.P. has been issued recently by Jefferson Chemical Co., 1121 Walker Avenue, Houston, Tex. Propylene glycol of this grade finds use as a hygroscopic and preservative ingredient in toiletries and other chemical specialties.



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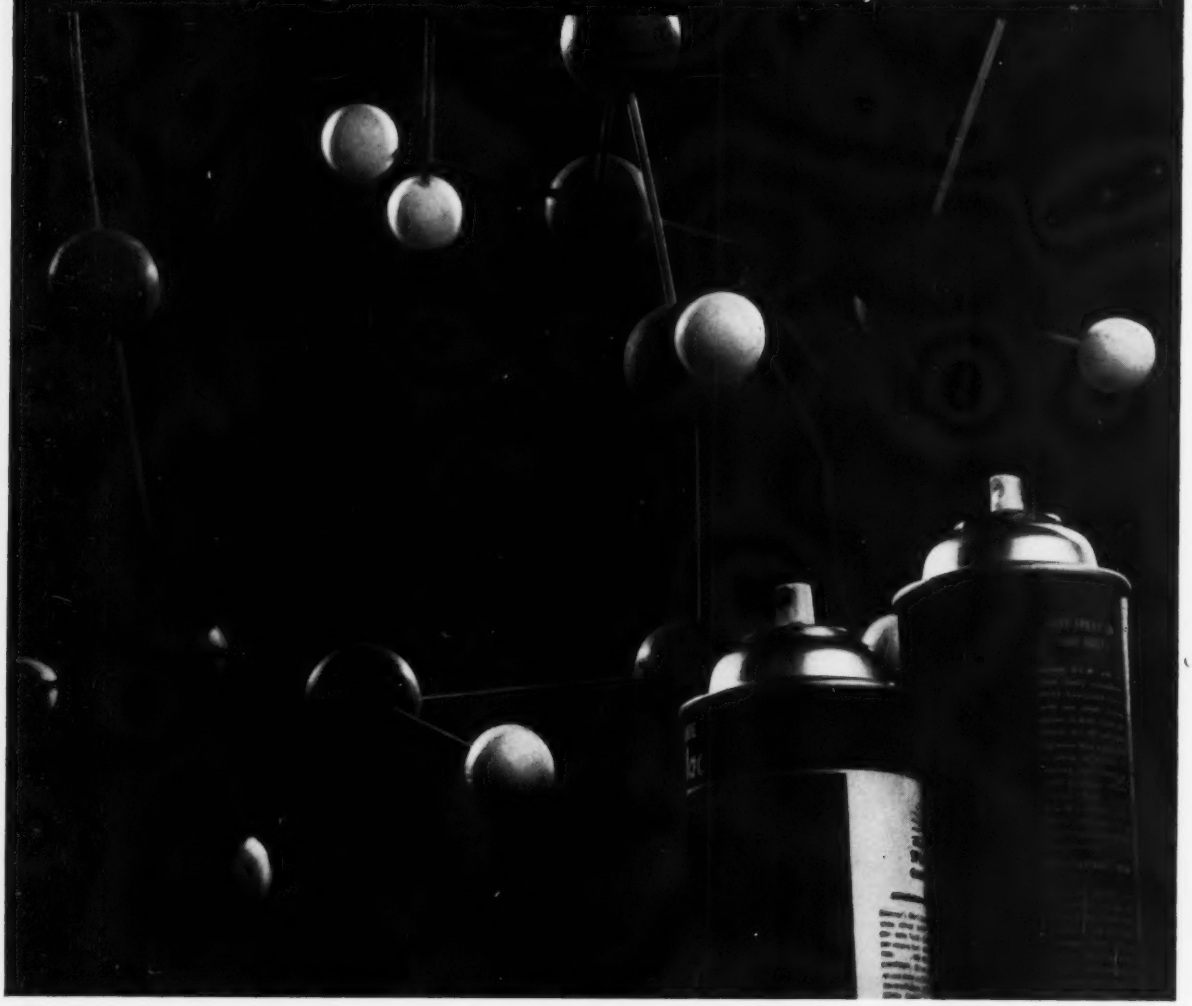

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New "Golden Deluxe Spraygrance" flacon by Parfums Corday, New York, for Christmas, 1961. Six inch high unit holds over 1,000 metered sprays of either "Toujours Moi" or "Fame" colognes, to retail for $5.00 (plus tax) each. Refills available at $3.50, plus tax. Bridgeport Metal Goods supplies the container, equipped with a VCA valve. Corday does its own filling.

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Cleaners
Detergents
Deodorants
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Floor Products
Insecticides
Laundry Bleach
Metal Cleaners
Moth Products
Polishes
Shampoos
Shave Products
Soaps
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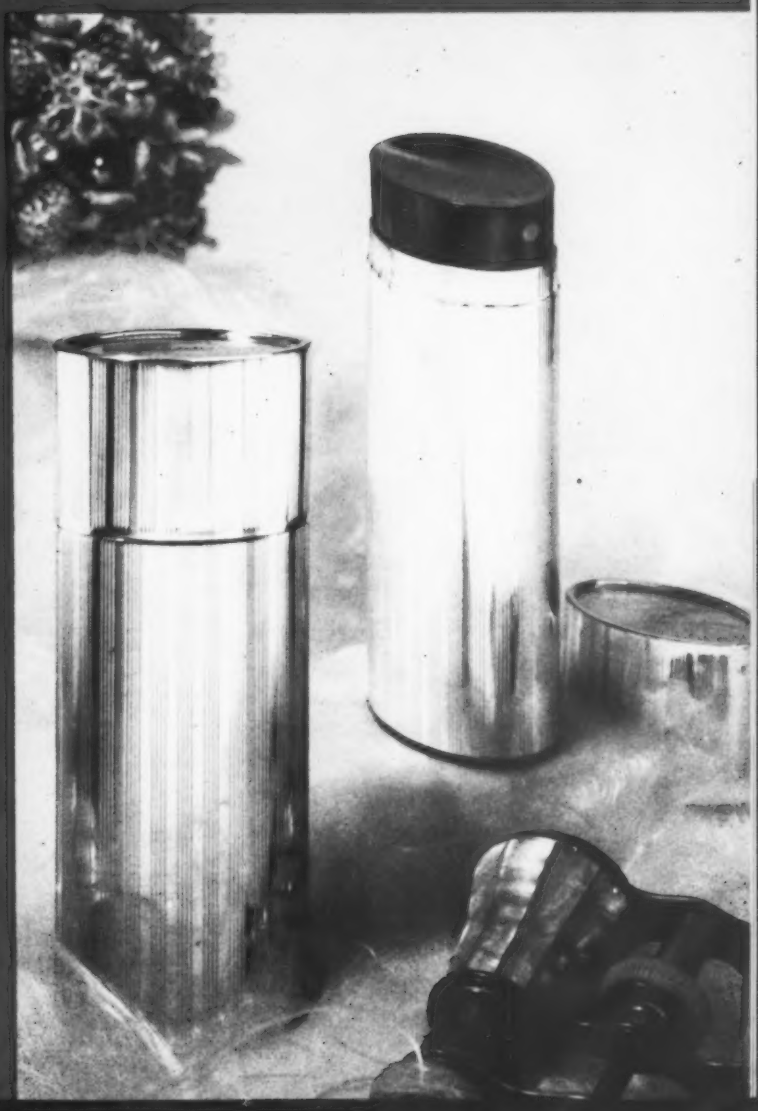
and other
Chemical Specialties

A market for over 28 billion packages annually



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Straight Side—Flaring—Lug Cover—Closed Top—whatever style of Steel Shipping Pails (or Dome Top Utility Cans) best fits your needs, Central turns them out in volume in a big, new, ultra-modern plant. The most advanced equipment makes possible the most rigorous quality control standards—and that means you get pails you can depend on for fine workmanship on *every* shipment. You have a full choice of fittings and closures, and your selection of sizes from 1 to 15 gallons capacity. And you should see the handsome full color lithographed designs we produce in our own fully equipped litho department for so many faithful customers (we'd be glad to make a decorating suggestion for *you*, if you'll just send us your label or literature).

We make slip top cans, too—seamless and pieced, 2 oz. to 25 pound capacity.

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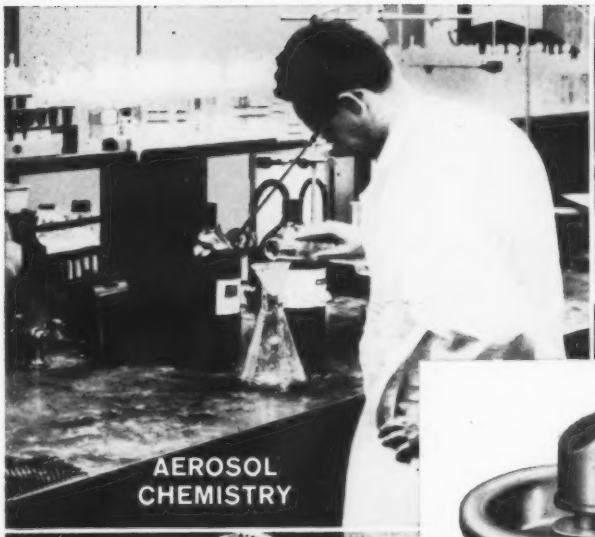
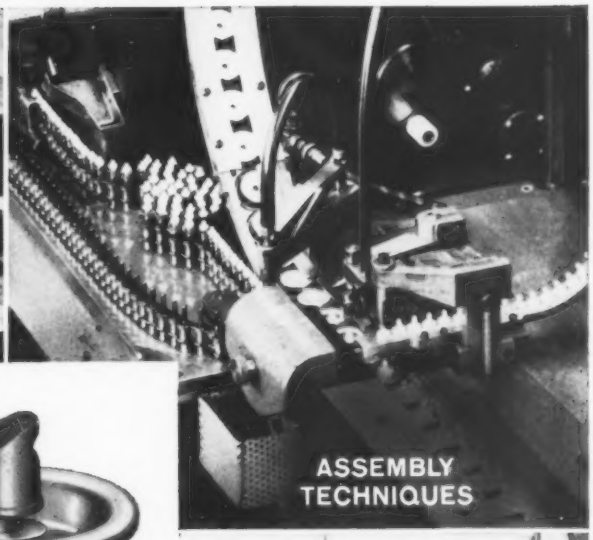
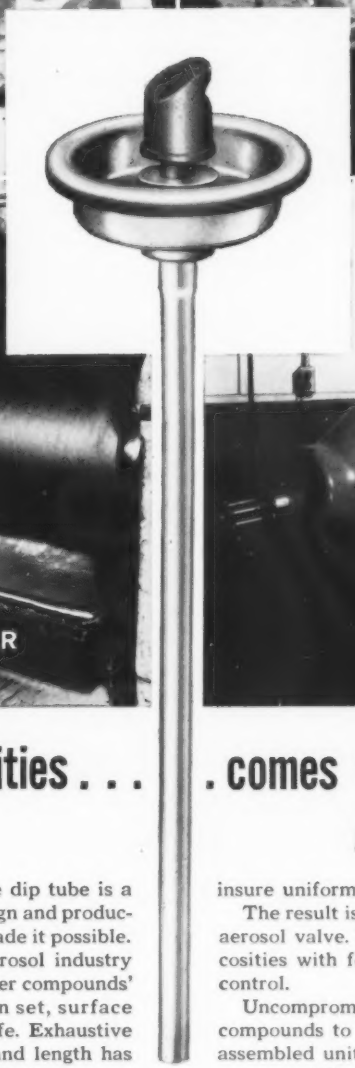
3200 SOUTH KILBOURN AVENUE • CHICAGO 23, ILLINOIS







From Unmatched Facilities . . . . comes Schrader's Superior Aerosol Valve

Every part of this aerosol valve except the dip tube is a Schrader product...and only Schrader's design and production facilities, greatest in the aerosol field, made it possible.

For example: techniques new to the aerosol industry were developed by Schrader to control rubber compounds' hardness, high resistance to compression set, surface smoothness, size uniformity, and service life. Exhaustive research into wire sizes, diameters, pitch and length has provided a superior valve spring with controlled tension. Rigorous new tests and special equipment were devised to control quality of each component. New production methods were used to insure uniformity and precision.

The result is the world's closest approach to a universal aerosol valve. It can handle a wide range of product viscosities with feather-touch actuation and true-aim spray control.

Uncompromising quality, extending from formulation of compounds to inspection and testing of components and assembled units is typical of Schrader. This valve is the culmination of 117 years of experience in meeting and solving pressurized air problems. Discuss your aerosol valve needs with Schrader's Aerosol Engineers.

Aerosol Valves

Schrader®
a division of SCOVILL

A. SCHRADER'S SON *Division of Scovill Manufacturing Co., Inc.*
470 Vanderbilt Avenue, Brooklyn 38, N. Y.

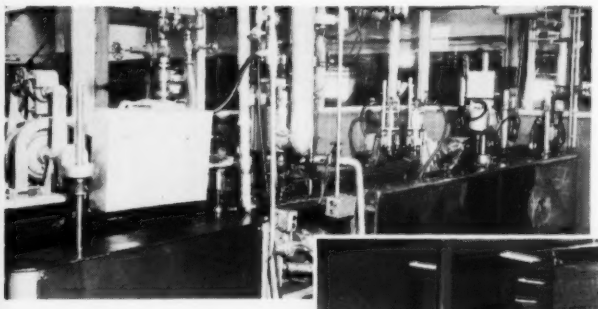
Put YOUR new aerosol product *in orbit* the easy way —on OUR INVESTMENT

Costing more than you expected to introduce your new aerosol product or to manufacture established products? You can reduce your capital requirements tremendously by utilizing FLUID'S contract aerosol filling service. Extraordinary formulating and storage facilities are also available according to your needs—thus relieving you of the entire manufacturing and filling process, if desired.

FLUID owns and operates two of the largest and most modern contract liquid and aerosol filling plants in the country, with seven filling lines. Quality control here is more than a mere catch-phrase. Quality control inspectors are stationed at various points on filling lines. In addition, roving inspectors make frequent checks of samples taken at random.

A completely equipped laboratory and skilled technical staff are capable of formulating your product for liquid, spray or foam dispensing, as may be indicated. An eight-car railroad siding, multiple shipping dock, complete warehousing and handling facilities accelerate deliveries.

Send for further information regarding the complete FLUID contract filling service. Write or telephone Fluid Chemical Company, Inc., 876 Mt. Prospect Avenue, Newark, New Jersey—HUmboldt 4-1000.



One of seven filling lines in the FLUID Plant

The FLUID Plant has spacious warehousing with up-to-date handling equipment.

Packaged by

FLUID

Chemical Company, Inc.

MANUFACTURING CHEMISTS SINCE 1921
NEWARK, NEW JERSEY

National Plastics Exposition

IF there were still any doubts that plastics for packaging all household and industrial chemical specialties are here to stay, a visit to the Ninth Annual National Plastics Exposition, last month, in New York, would have quickly dispelled that notion. Close to 30,000 persons interested in plastics crowded New York's mammoth Coliseum to view well over 250 exhibits covering every phase of plastics materials and fabrication equipment. Another 1500, or so, people squeezed into the grand ballroom of the Hotel Commodore, to listen to three days of discussion of various phases of plastics.

During a discussion of the "Forward Look for Plastics in Packaging," Donald R. Mahaney of Monsanto Chemical Co., St. Louis, told a "Plastics in Packaging" session that blown plastic bottle volume by 1965 will have increased 400 per cent. At the same session of the Ninth Annual Plastics Conference, Alvin J. Sanders of Colgate-Palmolive Co., New York, remarked that "plastics are not only here to stay, but they will continue to become more and more a part of our lives." In his talk, "Plastic Bottles, Tubes and Other Merchandising Packages," Mr. Sanders outlined what his company looks for in considering plastic materials. He also revealed some product case histories of detergent packaging by his company.

Public preference for products packaged in plastic is "overwhelming," according to Mr. Sanders. This finding was based on a study by Colgate-Palmolive Co.'s market research department. The study covered one of the company's products packed in "identically shaped containers," one being all plastic, the other a composite can. "Feel and squeezability" of the plastic container, Mr. Sanders said, were found to be "very desirable" attributes.

A novel use of plastics to promote the sale of his company's products was described by Mr. Sanders. "When it is desired that premiums be visible to stimulate impulse purchasing, we are overwrapping these with our products in a printed, transparent, heat-sealable film," Mr. Sanders explained. "Film transparency then becomes of major importance . . . ," he said.

The growing importance of plastics as packaging materials for Colgate-Palmolive products was indicated by Mr. Sanders with the statement that "our packaging laboratory is allotting about 50% of its time to the development and evaluation of plastics for potential uses." "Over the last two months," he stated, "We have held approximately 30 discussions concerning plastics with sales and/or technical representatives. The interests covered by these representatives ranged from those of the prime resin supplier to the converter. Our efforts, you see, are both extensive and intensive."

In conclusion, Mr. Sanders asked the rhetorical question: "Where do we go from here?". In answer he stated, "we think that there is an almost unlimited field ahead for these synthetics. The ability of plastics to be fabricated into eye appealing shapes, to protect a host of products and to eliminate hazards of personal injury are prime merchandising factors. But to supply a mass market, we must also have total low packaging costs —the sum of the costs of the container, its decoration, and its handling in our factories. Then, we believe, the use of these fascinating materials will be more speedily extended."

In predicting a 400% increase in the use of plastic blown bottles by 1965, Donald Mahaney said that this would represent a boost in plastics of from 50 to 200 million pounds. The figure, he said, includes carrier bottles for detergents, bleaches, polishes, starches, etc., as well as the widely accepted "poof" or squeeze bottle.

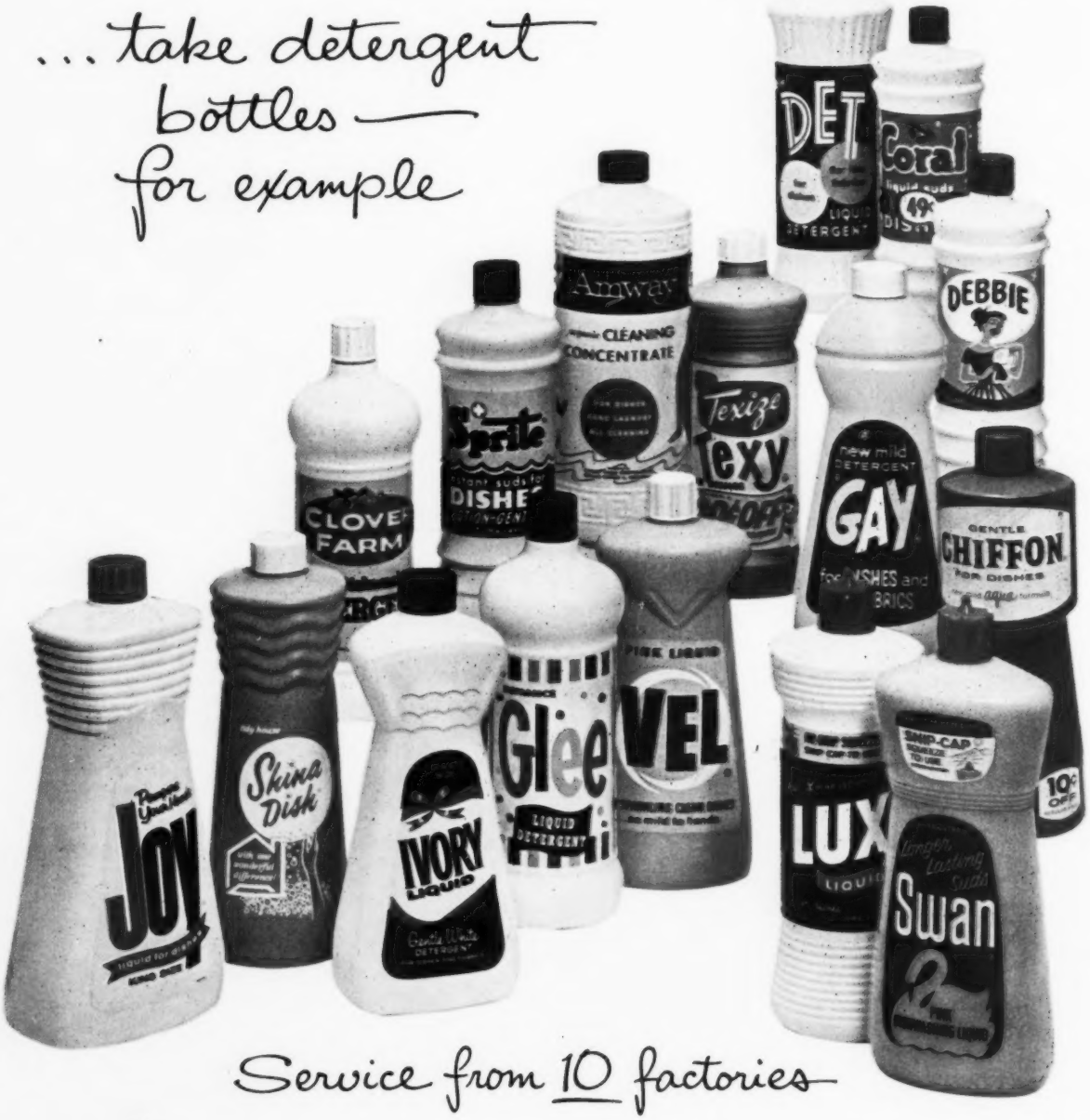
Florren E. Long of Continental Can Co., New York, speaking on "Flexible Plastic Packaging Films," termed new films "a further conversion of a previously available film." He said "such conversions are being made to improve permeability, appearance and performance properties." One property of new films which "needs "upgrading," he stated, is "gas permeability." He added that "polyvinylidene chloride coatings have been found in general to provide the best results in reducing gas permeabilities, and in some cases, moisture permeability as well."

Examples of this polymer coating upgrading can be found on the market today, according to Mr. Long. He indicated the most common ones being coated cellophane, paper, polyester, polyethylene, polystyrene, and polypropylene.

Marketing decision makers in the household chemicals field are not taking full advantage of design possibilities of plastic packages, according to Vic Smigel, packaging market manager for plastics molding materials of Dow Chemical Co. Shown below are examples of the distinctive design in packages possible with plastics. Bleach containers are made from linear polyethylene, most popular material for blownware.

OWENS-ILLINOIS
SKILL IN PLASTICS
TAKES MANY SHAPES
TO SERVE YOU

...take detergent bottles — for example



Service from 10 factories

PLASTIC BOTTLES
AN (O) PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES • TOLEDO 1, OHIO
PACIFIC COAST HEADQUARTERS • SAN FRANCISCO

packaging notes

Crown Cork Appoints Renne

Crown Cork & Seal Co., Philadelphia, recently appointed Benjamin C. Renne district manager of Philadelphia. Mr. Renne, who joined Crown in 1954 as a sales representative for the middle Atlantic region, is responsible for the sale of Crown's line of cans, closures and packaging equipment in Pennsylvania, southern New Jersey and northern Delaware.

Benjamin C. Renne

—★—

Moves Cincinnati Office

Anchor Hocking Glass Corp., Lancaster, O., recently announced the removal of its Cincinnati package division display and sales office from 938 Enquirer Building, to new and larger quarters at 1501 Madison Road, Cincinnati 6, O. L. S. McAllister, district sales manager in charge of the Cincinnati territory, is assisted by C. J. Donnelly and D. E. Shane. The telephone number at the new address is AVon 1-6111.

—★—

Schmitt CTMC President

Theodore W. Schmitt, executive vice-president of Peerless Tube Co., Bloomfield, N. J., was recently elected president of the Collapsible Tube Manufacturers Council, succeeding Frederic Remington, president of Peerless. Mr. Remington founded and became president of the industry's association in 1935.

—★—

New Spiral Tube Winder

Dietz Machine Works, Inc., Philadelphia, recently introduced its model "MC-76" spiral tube winder, which is equipped for applying preprinted spiral wound labels, in accurate register, as the outer ply of composite can bodies.

The tube winder is adaptable for making paper tubes ranging in length from one to 76 inches, with diameters of from one to three inches. It is said to operate at ribbon speeds of over 250 feet per minute, and to permit quick changeover from one size to another.

—★—

Eastern Can Goes Public

Trading in the stock of Eastern Can Co., Brooklyn, N. Y., which became publicly owned on March 16, 1961 with 221,000 class A shares outstanding, began on May 31. It is listed on the American Stock Exchange.

American Can Ups Roberts

Roscoe M. Roberts was recently named general sales manager for the Canco division of American Can Co., New York. Mr. Roberts, who had been assistant to the division sales vice-president, has been with the firm for 39 years.

Roscoe M. Roberts

Four new assistant general managers of sales, to supervise U. S. field operations, were also named. Douglas M. Johnson, New York, to the eastern districts; M.

Eastern Can Co. was listed on the American Stock Exchange on May 31. Holding an Eastern-produced can bearing the company's Curb letters is George M. Doliner, president of the firm, joined by Edward T. McCormick, left president of the Exchange.

publistyle

Up to 37 ounces (1100 cu. cm.) in capacity!

Impact extruded! No leakers!

Highest resistance!
300 psi

Lowest weight
12 oz. container 1.41 ozs.
6 oz. container .89 ozs.

Full range of sizes to meet any requirement of the aerosol industry. Wide choice of diameters, heights and shapes.

One-inch opening to fit any standard 1" valve cup.

Perfect decoration: base coating in any color plus lithographic printing in four colors.

All containers may be internally coated with special lacquers if they are to be filled with corrosive products.

Exclusive distributors for the North American Continent:
Impact Container Corporation, 11125 Walden Avenue, ALDEN, New York.

B.P.D.

BOMBRINI PARODI-DELFINO
MECHANICAL DIVISION

VIA LOMBARDIA, 31-ROME - ITALY ☎ 46.80 BOMPARDE - ROMA

M. Nield, Chicago, to the central districts; W. V. Lyons, New Orleans, to the southern districts, and F. J. Dowling, San Francisco, to the western districts.

—★—

New "King-Tuk" Brochure

A new 6-page color folder available from the folding carton division of Continental Can Co., 530 Fifth Ave., New York, describes "The King-Tuk Team of Cartoning Machines," for end loading type cartons.

These continuous motion, portable machines can set up and close up to 90 cartons per minute it is reported. The basic carton opening machine occupies a floor space of 28 by 66 inches. The complete forming and closing machine is 10 feet four inches by 28 inches. Specifications for both "Closematic" and "Openmatic" machine versions are included in the new booklet.

—★—

Heffron Joins Whitney

William Heffron, Jr., was recently appointed sales engineer for the packaging, processing equipment and supplies of L. A. Whitney Co., Needham Heights, Mass.

Mr. Heffron, formerly employed by Revlon Corp., Passaic, N. J. and Puritan Aerosol Corp., Boston, Mass., covers the state of Connecticut and lower New York State, except New York City and Long Island.

William Heffron, Jr.

Vulcan Names Kruysman

Atlantic-Vulcan Steel Containers, Inc., Peabody, Mass., a division of Vulcan-Associated Con-

John F. Kruysman

tainer Companies, Inc., Birmingham, Ala., recently announced the appointment of John F. Kruysman to its staff as a factory sales-service representative.

—★—

M. J. Sullivan Dies

Maurice J. Sullivan, 79, former president and chairman of American Can Co., New York, died, May 17th at his home at 810 Fifth Ave. Mr. Sullivan, who started with the firm in 1901, retired as board chairman in 1949. He remained as a member of the board of directors and of the executive committee.

—★—

Scovill Personnel Changes

Scovill Manufacturing Co., Waterbury, Conn., last month announced the appointment of C. A. Burnett as vice-president and general manager of its general manufacturing and cosmetic container divisions.

It was also announced that W. H. Harris has been appointed manager of the cosmetic container division, reporting to Mr. Burnett. He was formerly product manager of the division.

L. M. Scovill has been transferred to the main office of the cosmetic container division in Waterbury and will be in charge of inside sales activities, as well as production and inventory control. He will report to Mr. Harris.

H. F. Shotton has been appointed to succeed Mr. Scovill as eastern district sales manager, cosmetic container division, reporting to Mr. Harris. He was formerly sales promotion supervisor.

—★—

Rheem Ups McNicholas

James P. McNicholas was recently appointed central region sales manager, Chicago, of the container division of Rheem Manufacturing Co., New York. Mr. McNicholas, with Rheem for the past 13 years, has served in production, services, traffic, purchasing and sales positions. He succeeds A. W. Nides, who has been appointed container division vice-president in charge of marketing at Linden, N.J.

—★—

GCMI Elects Ferguson

James G. Ferguson, vice-president of Laurens (S.C.) Glass Works, Inc., was elected president of the Glass Container Manufacturers Institute, Inc., New York, at a recent meeting of the board of trustees. Roger H. Herzel of Armstrong Cork Co., Lancaster, Pa., was elected first vice-president, and William M. Cameron of Hazel-Atlas Glass Division of Continental Can Co., New York, second vice-president of the institute.

S. B. Demerell, Anchor Hocking Glass Corp., Lancaster, O., was re-elected to GCMI's board of trustees, and R. H. Mulford,

James G. Ferguson

UNDER
ARMOR
DEODORANT
Ucon®
propellants
UNION
CARBIDE
UNION CARBIDE CHEMICALS COMPANY
Division of Union Carbide Corporation
270 Park Avenue, New York 17, New York

Owens-Illinois Glass Co., Toledo, O., and Dr. A. W. Wishart, Knox Glass, Inc., Knox, Pa., were newly elected to the 11 man group, all to serve three year terms.

★

Kaltman Joins Equitable

Jack Kaltman has been appointed general manager of the flexible packaging division, Equitable Paper Bag Co., Long Island City, N. Y., it was announced recently by Leonard E. Canno, vice-president.

Prior to his appointment, Mr. Kaltman was eastern sales manager of Visking Co., division of Union Carbide Corp., New York, with whom he was associated for 13 years.

★

Steel Drum Brochure

A four page brochure, describing the steel "Twist Lock Drum" is now available from the container division of Jones & Laughlin Steel Corp., Pittsburgh, Pa. The booklet contains information about safety, economy, and sales benefits of the new drum.

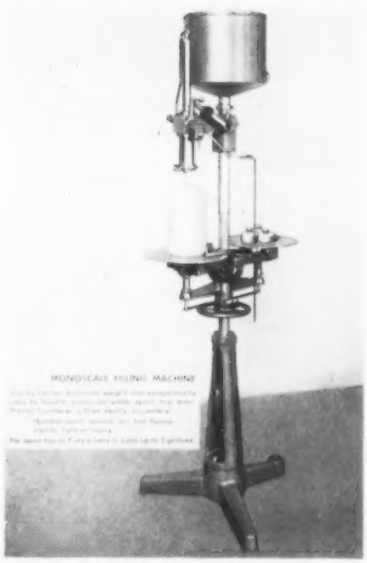
Details are given for drop tests on the drum, produced in accordance with government specification Mil-D-6054B. Specifications are given for each of the five drums in the line, including the number per 40 foot car.

★

FMC Caser Data

The "Sure-Way" series of package casing equipment is described and illustrated in an eight page folder issued recently by Food Machinery and Chemical Corp., Stokes & Smith Plant, 4900 Summerdale Ave., Philadelphia.

Available in 13 different models, the "Sure-Way" package caser conveys, positions, assembles and loads packages into shipping cases in a continuous, high speed, automatic operation. Choice of model depends on operating conditions and product being handled. The equipment is currently being used in assembling and case loading bar soaps, detergents, antifreeze, dentifrices.



"Monoscale Filler," from Karl Kiefer Machine Co., Cincinnati, fills all containers from 4 ounces to 5 gallons without motors or pneumatic devices. Fill control is by weight. Speeds up to 1200 containers an hour depending upon container size and neck opening. Can be loaded and unloaded by one operator, with spout changes effected in 30 seconds and container size changeover in two minutes, the company states.

New Bel-Art Catalog

Bel-Art Products, Pequannock, N. J., recently announced that its new, 44 page catalog describing, illustrating and giving prices on items in various plastics is now available.

★

Vulcan Sales Conference

Marketing and field sales personnel from its midwest area attended a recent two-day sales meeting at Vulcan Containers, Inc., Bellwood, Ill. Also in attendance were executives of Vulcan-Associated Container Companies, Inc., to participate in the orientation discussions pertaining to Vulcan's new organizational structure and concept resulting from the consolidation of seven Vulcan palnts.

The conference concentrated on the introduction of newly-created and improved facilities to expand customer service activities. The conference ended with a tour of Vulcan's manufacturing facilities.

Rheem Names Two

W. S. Goodfellow, vice-president in charge of marketing, container division, Rheem Manufacturing Co., New York, has been appointed vice-president and general manager of the division, it was announced recently. A. W. Nides, formerly container division central region sales manager, Chicago, has been named to succeed Mr. Goodfellow as vice-president in charge of division marketing.

Mr. Goodfellow joined Rheem in 1936, in the manufacturing department at Richmond, Calif. He was named manager of marketing for the container division, Linden, N. J., in 1956 and vice-president in charge of marketing in 1959. Mr. Nides, with Rheem for the past 19 years, was named assistant plant manager, Chicago, in 1951, and central region container sales manager in 1952.

A. W. Nides

W. S. Goodfellow

are
you
manufacturing
or
marketing...

"BRAND X"?

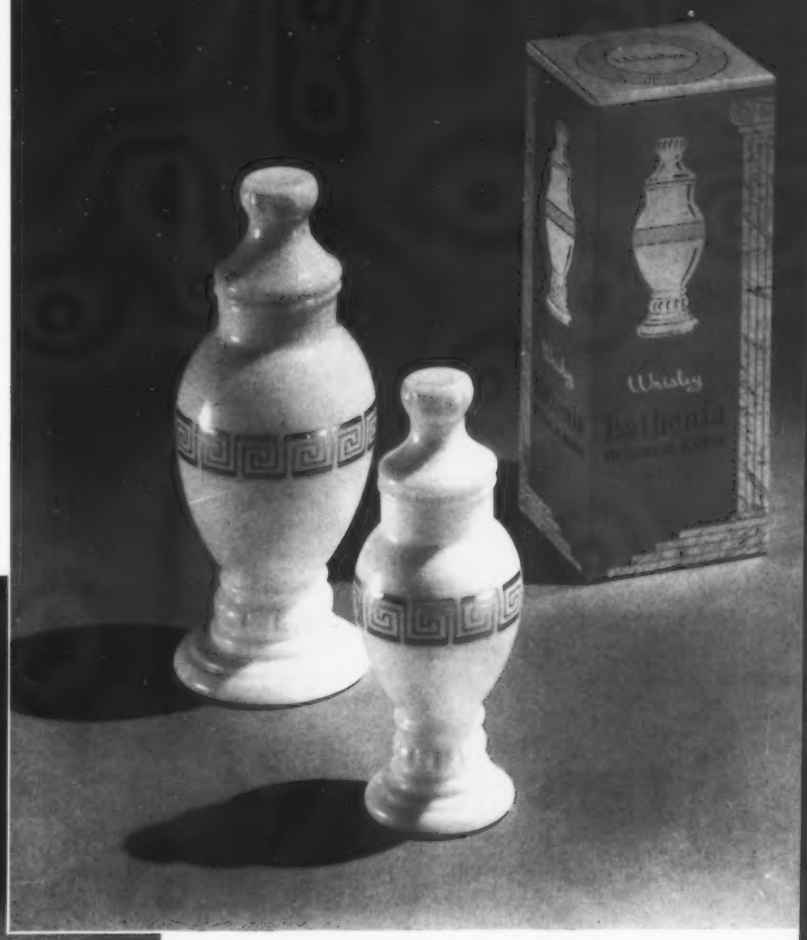
CONSUMER COMPLAINTS MAY BE THE REASON

Is your product second best with the consumer? Perhaps the cause is inferior valves which result in defects creating consumer resistance to repeat sales. Eliminate lost product sales caused by faulty valves. Why not play safe, it costs no more to use the aerosol valve which has quality built-in from design to delivery.

Use Precision —it's a sure way to better your position in the market place.

PRECISION VALVE CORPORATION
700 NEPPERHAN AVENUE, YONKERS, NEW YORK

What's New?



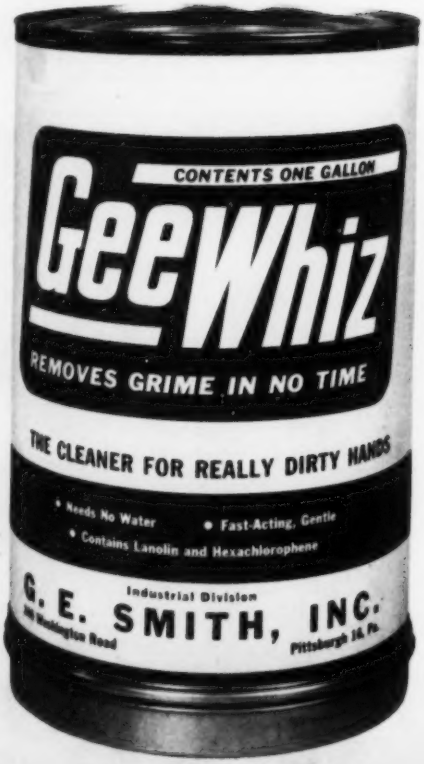
"Bathenia" bubble bath by Allen B. Wrisley Co., Chicago, comes in opal glass vase finished with Grecian decor in gold, is packaged in gift type carton. Ten inch vase retails for $3.00, eight inch size for $2.00.

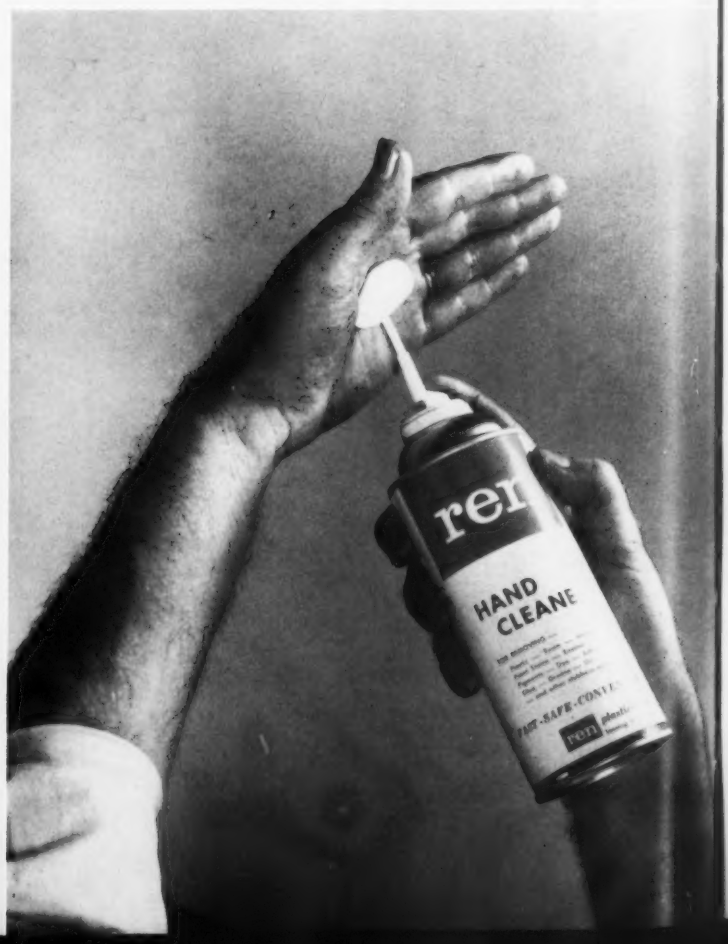
A special attachment for "pin point bug flushing" is featured on ¾ pound unit of "Professional Aerosol Insecticide" by Whitmire Research Laboratories, Inc., St. Louis, Mo. A flexible 1/16th of an inch plastic tube, attachment is said to prevent staining and economize highly concentrated formulation. Two flushes come with each dozen units, retailing at $2.50 each.

Countess Maritza line of concentrated spray mist comes in four fragrances, loaded in frosted 10-ounce bottle by Foster Forbes of Marion, Ind. Overcap by Metal Fabrications, Inc., decoration by Seri Print, both of Waterbury, Conn. B8F valve and mechanical break-up button by V.C.A., Inc., and fill by Aero-Chem, both of Bridgeport, Conn.

INDCO
Lye
DRAIN CLEANER
HIGH TEST
No Fumes
No Odors
NEW DUST-FREE
FLAKE
CAUSTIC SODA
opens drains fast!
CHANGES GREASE TO SUDS!

INSTANT SURFACE COOLANT
Spray Inside Footwear
Cools
Hot Tired
Feet
Koolz
It feels So Good!
IDEAL FOR MOTORISTS
Instantly cools and refreshes feet
for safe, wide-awake driving!
SPRAY COOLS AUTO SEATS


CONTENTS ONE GALLON
GeeWhiz
REMOVES GRIME IN NO TIME
THE CLEANER FOR REALLY DIRTY HANDS
• Needs No Water
• Fast-Acting, Gentle
• Contains Lanolin and Hexachlorophene
Industrial Division
G. E. SMITH, INC.
Pittsburgh 16, Pa.


HAND
CLEANE

Captions: Facing Page

"Indco" Drain Cleaner by Independence Chemical Co., Gloucester City, N. J., reformulated for rapid performance, comes in 13 ounce and two pound cans lithographed in red and blue on white.

"Koolz" dry aerosol spray by DeMert & Dougherty, Inc., Chicago, is said to cool not only hot feet but also auto seats, and other fabric, leather, metal and plastic surfaces, comes in 8 and 16 ounce cans.

"Gee-Whiz" waterless hand cleaner by G. E. Smith, Inc., Pittsburgh, Pa., contains lanolin and hexachlorophene, is sold in one gallon cans, containing 7½ pounds. Can fits into dispenser marketed by Smith, features follower plate for complete dispensing.

"Ren" all purpose waterless hand cleaner is pressure packed in 12 ounce cans; contains antiseptic ingredient and wintergreen fragrance. Marketed by Ren Plastics, Inc., Lansing, Mich., cleaner was originally intended for use in plastics shops.

Captions on This Page

Harriet Hubbard Ayer's spray mist cologne comes in Golden Chance, Woodsy, Exotic, and Floral fragrance. Two ounce Foster Forbes (Marion, Ind.) bottles are equipped with B8F valve and AC4 mechanical breakup actuator by V.C.A., Inc., Bridgeport, Conn.

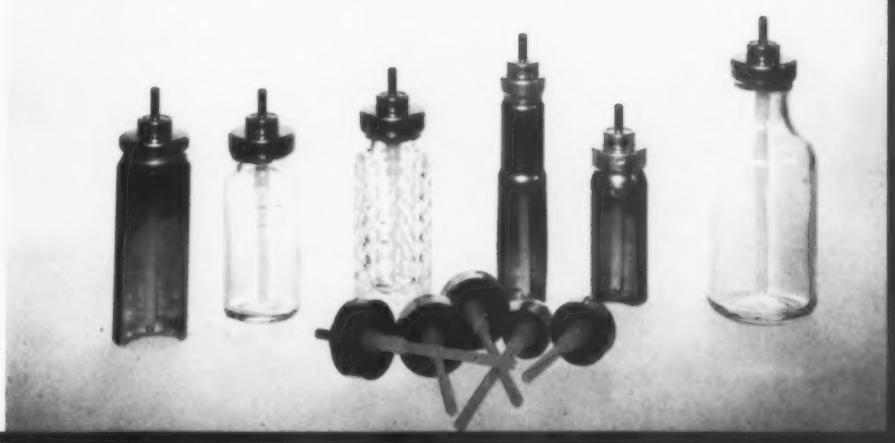
"Krylon" Cleaner Lubricant by Krylon, Inc., Norristown, Pa., for use on electrical contacts, tuners, etc., is available in 16 ounce aerosol can at $1.95 and six ounce unit at 98 cents. Plastic hose extender for hard-to-reach areas is supplied with each can.

"Mosquito-Go" scatter powder by Camp Chemical Co., Brooklyn, N. Y., is applied at the rate of 2½ pounds per ¼ acre for mosquito protection lasting from two to seven days. 2½ pound packages retail for $2.00; larger units are available.

Spray White All Purpose "Loob" is intended for automotive, industrial, and home use, provides clean lubrication for inaccessible areas, according to Spray Products Corp., Camden, N. J. Product comes in 16-ounce pressurized can.

"Fly Fog" pressurized insecticide, designed for use in restaurants and food handling establishments, is marketed in 2½ pound disposable cans by Residex Corp., Clark, N. J. Each unit is said to treat about 800,000 cubic feet.

New molded dip tubes by V.C.A., Inc., Bridgeport, Conn., are part of valve. Made to tolerances of plus or minus .005, tubes insure complete product dispensing. Cross notch prevents tube sealing off on bottom of container.



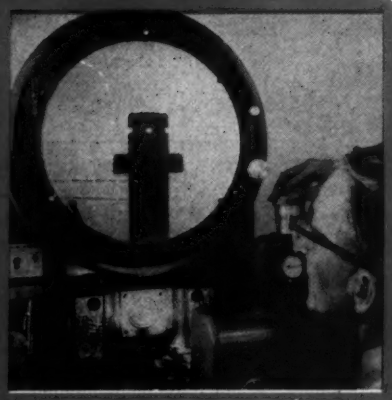
the UNSEEN ADVANTAGE of

RISDON Aerosol Valves

Protected Quality Performance

Strict, scientific, uncompromising quality control insures Risdon valve performance when your customer presses the actuator. This is the unseen advantage, the *extra* value you get from Risdon. It results in consistent, customer-pleasing performance that wins repeat sales.

At left, inspector uses hydraulic tester to simulate pressure conditions of filling. Technician on right uses special, custom made gauge to check the orifice in an actuator.



A contour projector accurate to one-half thousandth of an inch enlarges silhouette of valve components up to 50 times for precise checking of dimensions and contour.

In the quality control test on the left, actuators are being examined under a microscope. On the right, orifices of "Micro-Mist" actuators are being checked with a pin gauge.

Contact Risdon for specific information on the valve for your pressurized product or send for Risdon's free booklet, "Aerosol Dispensing."

THE RISDON VALVE LINE
includes

- **the GB Valve**—for glass, plastic & small metal containers with 20 MM opening
- **the 5210 Valve**—for standard 1" opening metal containers
- **the Metered Spray Valve**—for pre-measured sprays
- **the "Magna-Meter"® Valve**—for larger pre-measured dispensing of sprays, liquids or foams; for liquefied propellants and NITROGEN
- **the "Micro-Mist"® Valve**—for dispensing 3-Phase products or super spray performance on 2-phase products, liquefied propellants and NITROGEN

ALL RISDON VALVES ARE COVERED BY PATENTS OR PATENTS PENDING.

RISDON

THE RISDON MANUFACTURING CO.
AEROSOL DIVISION
NAUGATUCK, CONNECTICUT

RI-128

new trade marks

THE following trade marks were published in recent issues of the *Official Gazette* of the U. S. Patent Office in compliance with section 12 (a) of the Trade Mark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. See rules 20.1 to 20.5. As provided by section 31 of the Act, a fee of $25 must accompany each notice of opposition.

Ming Jade — This for soap. Filed Nov. 25, 1960 by Stanley Home Products, Inc., Westfield, Mass. Claims use since Aug. 11, 1958.

C-Em-Die — This for chemical composition for use as a germicide, insecticide, fungicide, rodenticide, herbicide, room deodorant and air sanitizer. Filed June 22, 1960 by St. Lawrence Chemical Co., Ogdensburg, N. Y. Claims use since Nov. 14, 1922.

Mellocraft — This for polishes, waxes; combination polishing and cleaning compositions. Filed May 27, 1960 by Mellocraft Co., Toledo, O. Claims use since Jan. 18, 1933.

Larvatectant—This for insecticide. Filed June 8, 1960 by Morton Chemical Co., Chicago. Claims use since April 13, 1956.

Dri-Brite — This for bleach. Filed June 16, 1960 by American Home Products Corp., New York. Claims use since May 17, 1960.

Auto-Foam — This for foam liquid for fire extinguishing purposes. Filed June 30, 1960 by Automatic Sprinkler Corp. of America, Youngstown, O. Claims use since April 15, 1960.

Di Halo — This for sanitizing and disinfecting agent. Filed Sept. 8, 1960 by Drug Research, Inc., Adrian, Mich. Claims use since April 1954.

Armazide—This for water disinfectant. Filed Sept. 26, 1960 by Armour and Co., Chicago. Claims use since Aug. 19, 1960.

Delicare—This for cold water detergent for domestic use. Filed Feb. 11, 1960 by Hagan Chemicals & Controls, Inc., Pittsburgh, Pa. Claims use since Dec. 31, 1959.

Answer—This for laundry detergent. Filed March 14, 1960 by Tidy House Products Co., Shenandoah, Iowa. Claims use since March 4, 1960.

Opti-Clean—This for eyeglass cleaner and anti-fogger. Filed Aug. 19, 1960 by Lincoln Industries, New York. Claims use since Aug. 8, 1960.

Color-Kist — This for hair shampoo. Filed Oct. 5, 1960 by Realistic Co., Cincinnati, O. Claims use since Sept. 19, 1960.

Sani-Gleam — This for floor waxes. Filed Oct. 13, 1960 by Enterprise Paint Manufacturing Co., Chicago. Claims use since Sept. 15, 1960.

Pesco — This for herbicides, insecticides, and fungicides. Filed Jan. 12, 1959 by Fisons Pest Control, Ltd., Felixstowe, England. Claims use since Nov. 28, 1958.

Warner — This for compounds for use in cooling systems for liquid cooled internal combustion engines, namely, sealing compounds and rust inhibitors. Filed May 25, 1960 by Warner-Patterson Co., Chicago. Claims use since March 1922.

Boon — This for insecticide. Filed Oct. 26, 1960 by O. M. Scott & Sons Co., Marysville, O. Claims use since Oct. 17, 1960.

Pomp — This for rug and upholstery cleaner. Filed April 20, 1960 by H. Talbot Co., Cincinnati. Claims use since Feb. 23, 1959.

Red & White — This for household detergent. Filed May 5, 1960 by Bushey & Wright, Inc., Chicago. Claims use since 1931.

Glo-Talk — This for bottle-washing compound. Filed Nov. 4, 1960 by Diversey Corp., Chicago. Claims use since Aug. 30, 1960.

Appeal — This for dishwashing compound. Filed Nov. 4, 1960 by Diversey Corp., Chicago. Claims use since Aug. 25, 1960.

Bril-Talk — This for bottle-washing compound. Filed Nov. 4, 1960 by Diversey Corp., Chicago. Claims use since Aug. 31, 1960.

Hub — This for sudsing cleaner, cleanser and detergent. Filed Nov. 17, 1960 by Procter & Gamble Co., Cincinnati. Claims use since Sept. 23, 1960.

Crazy-Bait — This for insecticide. Filed Sept. 29, 1960 by Industrial Chemical Products Co., Philadelphia. Claims use since Sept. 28, 1960.

Away — This for air deodorant. Filed Oct. 7, 1960 by Colgate-Palmolive Co., New York. Claims use since June 21, 1960.

Rif — This for detergent in liquid form for cleaning floors, rugs, upholstery, and all household items. Filed Nov. 12, 1959 by Empire Cleaners and Furriers, Inc., Hazelton, Pa. Claims use since Oct. 16, 1959.

Our Value — This for household detergents. Filed Jan. 6, 1960 by Kitchen Products, Inc., Chicago. Claims use since May 1952.

K-San — This for acid sanitizer detergent. Filed May 18, 1960 by Klenzade Products, Inc., Beloit, Wis. Claims use since July 27, 1959.

Quik-Solv — This for all-purpose cleaner, cleanser and detergent. Filed Sept, 21, 1960 by Colgate-Palmolive Co., New York. Claims use since April 18, 1960.

Soaclens — This for cleansing solution for contact lenses. Filed Oct. 10, 1960 by Parsons Chemicals, Inc., Washington, D. C. Claims use since Aug. 4, 1960.

Kas — This for laundry detergent. Filed Oct. 31, 1960 by Koss Appliance Service Co., Philadelphia. Claims use since Oct. 14, 1960.

Poly-Glo — This for heavy-duty, water emulsion resin floor dressing having slip-resistant properties, sold to industrial, commercial and institutional establishments for treating floors. Filed May 19, 1960 by Masury-Young Co., Charlestown, Boston. Claims use since May 9, 1955.

Sml-Z-Gud — This for room deodorant. Filed April 6, 1959 by Service Industries, Philadelphia. Claims use since March 24, 1959.

The Extra Man — This for corrosion inhibitor. Filed Sept. 16, 1959 by CRC Corp., Philadelphia. Claims use since Sept. 3, 1959.

Meadow Mist — This for air deodorant spray. Filed Nov. 3, 1959 by Trager Manufacturing Co., Scranton, Pa. Claims use since Feb. 1, 1957.

Aquaguard — This for algaecidal composition which chlorinates swimming pools. Filed Jan. 22, 1960 by Chem Lab Products, Inc., Norwalk, Calif. Claims use since June 1, 1959.

Off! — This for insect repellents. Filed April 1, 1960 by S. C. Johnson & Son, Inc., Racine, Wis. Claims use since Nov. 1, 1956.

Easy-On — This for starch. Filed April 22, 1960 by American Home Products Corp., New York. Claims use since March 19, 1960.

Like-Best — This for rodenticide. Filed Sept. 26, 1960 by Reliable Food Products, Detroit, Mich. Claims use since Feb. 18, 1959.

Null — This for crab grass and lawn insect control. Filed Nov. 23, 1960 by International Minerals and Chemical Corp., Skokie, Ill. Claims use since Nov. 10, 1960.

Fab — This for cleaner, cleanser and detergent. Filed Aug. 11, 1960 by Colgate-Palmolive Co., New York. Claims use since June 8, 1960.

Galvanic — This for sudsing cleaner, cleanser, and detergent. Filed Aug. 31, 1960 by Colgate-Palmolive Co., New York. Claims use since Feb. 5, 1960.

Dicryl — This for herbicide. Filed April 21, 1960 by Food Machinery and Chemical Corp., New York. Claims use since March 3, 1960.

Zenith — This for anti-freeze. Filed July 1, 1960 by Pennstate Lubricants Co., Chicago, Ill. Claims use since May 6, 1960.

Rancher — This for herbicides, insecticides, fungicides, miticides, grain fumigants, grain protectants, seed treatments for disinfecting, disease and control, and soil fumigants. Filed Sept. 6, 1960 by Rancher Products, Minneapolis, Minn. Claims use since April 1959.

Kompact — This for cleaning and polishing preparations for automobile finishes and the like. Filed June 6, 1960 by Turtle Wax, Inc., Chicago. Claims use since May 26, 1960.

Speedry — This for dusting and wiping cloths impregnated with a polishing material. Filed Sept. 12, 1960 by Speedry Chemical Products, Inc., Richmond Hill, N. Y. Claims use since May 1, 1960.

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"Raid" house and garden insecticide of S. C. Johnson & Son, Inc., is designed to control insects that attack rose bushes and other types of flowers and plants.

House and Garden Aerosol Insecticides

Basic concept in formulating Insecticides for house and garden is the utilization of a non-phytotoxic solvent or carrier

By E. F. Mace*,
S. C. Johnson & Son, Inc.
Racine, Wis.

EASE of application, convenience, effectiveness, and consumer appeal have been the keys to success of many new household products. This, too, is the story with house and garden aerosol insecticides—convenient, easy to use, effective against a wide range of insects, with consumer appeal in the dual purpose approach.

The number of products of this type on the market today as well as the volume of units sold each year attest to the utility and success of the house and garden aerosol insecticides.

* Paper presented during 47th midyear meeting, Chemical Specialties Manufacturers Assn., Chicago, May 16, 1961.

History

The term house and garden as used here refers to a dual purpose, aerosol or pressurized spray, insecticide for control of both household and plant insect pests.

Prior to the development of the first house and garden product, insecticides were specifically for control of insects in the home or for use in the garden. The household problems were well taken care of with aerosol and pressurized space sprays. Control of plant insect pests consisted largely of emulsifiable concentrates, dusts, and special plant spray aerosols. For the most part excellent insect control can be obtained with the available chemicals; however, they do frequently present problems of measuring, application and storage of concentrated toxic materials. For the large grower or gardener prepared to handle these problems the concentrated and emulsifiable insecticides are the primary methods of plant insect control. The apartment dweller with a few house plants or a window box, or anyone with a limited number of garden plants, appears to have little desire to measure a teaspoon full of an insecticide in a gallon of water and spray. Frequently, in a limited space area, it is not possible to store safely the multiple insecticides necessary, nor does the consumer know what to buy and where to buy it.

This, then, plus the added value of multiple use, is the utility or usefulness of the house and garden type insecticide.

Formulation

The basic concept of the house and garden aerosol insect product is the utilization of a non-phytotoxic solvent or carrier. Let us consider a typical or generalized formula:

Pyrethrins	0.20%
Piperonyl butoxide	1.00
Methoxychlor	2.00
Rotenone	0.15
Other Cube resins	0.30
Solvents or carriers	16.55
Propellants 11/12 (50:50)	80.00

From this we can see little variation from the conventional household aerosol. A knockdown agent such as pyrethrins is used at a level to provide good knockdown of flying insects, such as

houseflies and mosquitoes. Piperonyl butoxide as a synergist at a 1-5 ratio increases the knockdown. A chlorinated hydrocarbon, such as methoxychlor, provides kill of flying insects. A second purpose of methoxychlor is to provide control of the chewing type or leaf feeding insects. Rotenone is frequently used for the specific purpose of controlling aphids and other sucking insects. Propellant levels may vary but for the most part are in the range of 80%; 40% propellant 11 and 40% propellant 12. In addition, there must be 16 or 17% of a carrier or solvent. The most commonly used carriers are isopropyl alcohol, ethyl alcohol, acetone and other volatile, non-phytotoxic solvents. The selection and use of these non-phytotoxic carriers is the most important factor in the development of the house and garden type product.

A development program for this type of product requires close cooperation between formulation and bioassay. It must be remembered that a *dual* purpose application is the goal; therefore, primary emphasis must be placed on both phytotoxicity and space performance with the aim of producing a quality space spray *and* a quality plant spray.

One of the first facts to be learned is that normal rules and set patterns of phytotoxic performance do not always hold true with a house and garden formulation. Insecticides and solvents which have been shown in normal field application to be non-phytotoxic may well cause severe plant damage when used in a house and garden formulation. "Non-phytotoxic" oils which are perfectly harmless when applied in water based or other systems may be highly phytotoxic when used in a house and garden system. Most formulations will not permit the use of oils at levels greater than one or two per cent. Since the rules and patterns do not apply, it, therefore, becomes a matter of systematic trial and error.

New developments have made possible the use of powder aerosol insecticides for household and agricultural use. Shown is all-purpose aerosol insecticide containing "Sevin" for protection from insect damage of ornamental potted plant. "Sevin" is a product of Union Carbide Corp., New York.

Since the finished product is self-dispensing, the valve is as important as the toxicants themselves. Failure of the valve and press button to function properly can well make the difference between an effective performance and a poor performance. The spray pattern and particle size must be adjusted for optimum performance in both house and garden use.

Effectiveness

Most products of the house and garden type on the market today do a good job in controlling the common household insect pests, either as a space application or as a contact spray. Under the Standard CSMA Aerosol Test for Flying Insects, these products meet (and exceed) the Standard OTA both in knockdown and 24 hour mortality. Cockroach tests with the CSMA Roach Aerosol test method show that this type of product will "meet" the standard. It has been noted that under use conditions excellent results have been obtained. In addition to houseflies and roaches, good control of mosquitoes, ants, silverfish, clothes moths, carpet beetles and other common household pests, by contact action, has been shown. In effect, a wide range of household insect effectiveness is obtained.

Most plant insect pests can be controlled with house and garden formulations. Specifically, aphids, mites, thrips (exposed), Army worms, Mexican bean beetles and others are readily controlled through direct contact. It is interesting to note that while rotenone was primarily included for control of aphids and other sucking insects in the original formulation, it has since been shown that the synergized pyrethrin level is high enough to provide the necessary control. It is, therefore, possible to eliminate rotenone. Rotenone can be quite irritating to the nose and throat of indoor users; therefore, the elimination of rotenone from this type of product makes them much more pleasant to use.

Phytotoxicity is a major problem. The house and garden formulations are relatively non-phytotoxic to most plants when used in accordance with directions. The safety factor in dosage rates ranges from two to eight times the recommended applica-

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tion, depending on the plant species and individual plant conditions. This is an area on which major emphasis must be placed. It is not enough to know only that these materials are safe at double dosage. Tests that do not produce damage at some level or under some conditions provide little information. Phytotoxicity tests under laboratory conditions of controlled light, humidity and temperature provide the background necessary to move into greenhouse and field tests. As a general rule, greenhouse phytotoxicity will show plant damage where tests under artificial light conditions will not. Field tests, of course, are the proving grounds for a product. In all these areas, it still is necessary to determine the margin of safety, or under what conditions of dosage or treatment plant damage will occur.

Probably the greatest area of consumer problems with a house and garden aerosol is plant damage. The major cause is misuse rather than inherent phytotoxicity of the formulation. It appears to be the custom to *use* and then read, rather than to read the directions and then use. Take, for example, a person with aphids on a rose bud. A frequent procedure seems to be to take aim at the insects from a range of three to six inches and spray until the aphids are either blown off or well soaked in spray. This certainly takes care of the insects but the same results could have been attained by placing the bud on a board and disposing of the aphids with a stone. In any event, the results would have been the same, no aphids—no flower! The result of this type of treatment is the use of many times the necessary amount of insecticide, as well as a significant lowering of the plant temperature. The possibility of freezing plants with aerosol sprays is very real. Consider for a moment the temperature change caused by a conventional aerosol sprayed at a thermometer from varying distances. At three inches we can drop the temperature from 80°F. to 32°F. in approximately five seconds, at six inches and the same temperature change requires 12 seconds, at 12 inches it takes 60 seconds. In view of these temperature changes, it is easy to see the possible effect on plant tissue.

Another situation frequently encountered is the unhealthy condition of plants prior to treatment. Plants are not generally treated when the infestation first occurs, but rather when the infestation becomes so bad that survival of the plant is questionable. We then have a condition of a weakened plant subjected to an extreme overdose of insecticide, with a little frostbite added for good measure.

There are, of course, many factors which enter into the plant damage picture. Light, relative

(*Turn to Page* 133)

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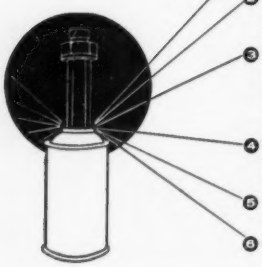

1. Standard crimping collet for any size can with 1" valve mounting cup.
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N. Y. C. Bans Flammable Propellants

THE use of "flammable gas" as a propellant for pressure packaged hair sprays, paints, shellac, varnishes, enamels and lacquers has been outlawed by the city of New York. The new ruling of the Fire Department, which became law with its publication June 20 in *The City Record,* official journal of the City of New York, would seem to halt the use of butane and propane gases as propellants in aerosol products mentioned above.

The Fire Department's action banning "flammable gas" was effected by amendments to regulation relating to labeling requirements for pressurized containers for hair sprays and regulations relating to the labeling of hazardous liquids. Aerosol hair sprays flashing below 300°F. when tested by the Tagliabue open cup method are covered by regulations of the New York City Fire Department adopted in August, 1959. They call for the warning "Caution — Flammable. Do Not Use Near Fire or Flames," to be printed on labels of aerosol hair sprays in types sizes ranging from 6 to 14 point, depending upon the size of the label. In addition the regulation calls for the warning to be located at the top of the front panel or immediately above the principal directions for use. In addition, the warning must be printed in any color, preferably red, on a plain and distinctly contrasting background. There were five sections in the regulation as adopted in 1959. The latest ruling, banning "flammable" propellants is contained in the newly adopted sixth section which reads: "6. That no flammable gas is to be used as a propellant."

The identical wording is used for the newly adopted section 6 of the regulations covering "hazardous liquids." Hazardous liquids in the regulations filed April 16, 1959 are classified as "paints, shellac, varnishes, enamels and lacquers packaged in aerosol (pressurized) containers, and wherein one of the foregoing terms appears as part of the product name." Labels of "hazardous liquids" are required to carry the product name, the name and address of the manufacturer or agent, and a warning statement, followed by the New York Fire Department number or certificate of approval number. Permit numbers are required on products filled within city limits; certificate of approval numbers must appear on labels of containers filled elsewhere. In addition, the warning statement: "Caution—Keep from Flame," must be printed in bold face capitals of at least 12 point type. This is to be followed immediately by the permit or certificate of approval number in less than 12 point type. The warning statement must appear on the front of the container or immedaitely above the principal directions for use. The regulations forbid the use of such words as "safe," "safely," etc., or wording which might diminish the value of the warning statement. Labels for "hazardous liquids" must be submitted to the Fire Commissioner for approval. Product samples are required for each product for which application is made, and sample labels in approved form are required to be submitted.

Paints, etc., which develop flash points exceeding 300°F. when tested by the Tagliabue open cup method are not covered by the regulations.

—★—

ATI Expands Headquarters

Aerosol Techniques, Inc., Bridgeport, Conn., aerosol custom fillers, has doubled its operational area by acquiring space adjacent to its headquarters. The newly acquired premises were previously occupied by Shoppers' Fair.

With this latest expansion, ATI's production, laboratory, office and additional warehouse facilities cover almost 70,000 square feet. The combined sites also offer 50,000 square feet of outdoor space for bulk storage and automobile parking.

ATI also has 45,000 square feet of warehousing, receiving and shipping facilities at another nearby location.

Founded in 1955 by H. R. Shepherd, Aerosol Techniques pressure packages household chemical specialties, toiletries, and a wide range of other products.

—★—

Pace Adds Representatives

Pace, Inc., Wilmington, Del., contract aerosol loader, recently announced the appointment of three representatives to handle its private label line of aerosol products to the sanitary supply industry.

The new representatives are: Seidler & Egdall, Boston, Mass., for New England; Edward Wehmeyer, Ocean City, N. J., for Pennsylvania, Virginia, Maryland, Delaware and New Jersey; and Lawson H. Yates Co., Nashville, Tenn., for Mississippi, Alabama and Tennessee.

—★—

Filler Catalog Available

Popper & Sons, Inc., 300 Fourth Ave., New York, recently announced the availability of its new catalog, No. 361F, describing an expanded line of 11 high speed liquid filling machines. Incuded in the booklet is a range of two, four and eight head automatic, conveyorized, piston-type liquid fillers capable of handling free flowing, foamy and viscous drug, soap and cosmetic products. Speeds of the machines run as high as 240 containers per minute, the company states.

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One reason why "Genetron" fluorocarbon propellants continue to be the first choice of leading fillers is their *nonflammability.* Another reason: *constant pressure.* The consumer never feels he's been cheated by "leftover" product that he

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"Genetron" aerosol propellants make better aerosol products. Better products not only build markets—they *hold* them! If you'd like to know more about the advantages of "Genetron" propellants, just write us.

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Western Appoints Baum

Western Filling Corp., Los Angeles custom aerosol filler, recently appointed Darrell Baum as

Darrell Baum

chief chemist. He is in charge of quality control in both the aerosol and non-aerosol divisions. Mr. Baum joined the firm in 1960 as a staff chemist.

—★—

Barcelona Aerosol Meeting

The first public meeting arranged by the Asociacion Espanola de Aerosols, in conjunction with the Asociacion Nacional de Quimicos de Espana, was held on May 11, in Barcelona. Dr. J. Artigas acted as chairman. Two films were shown: "The Magic Button," lent by the Chemical Specialties Manufacturers Association, New York, and "Verre et Aerosols," lent by Saint Gobain, Neuilly-s-Seine.

—★—

New "Genetron" Plant

General Chemical Division of Allied Chemical Corp., New York, recently announced the production of "Genetron" aerosol propellants at a new plant at Elizabeth, N. J. The new plant, third of General's "Genetron" producers, has a capacity in excess of 10,000 tons a year, the company states. General's two other "Genetron" plants are in Baton Rouge, La., and Danville, Ill. It will supply customer requirements in the Northeast, including New York State, Pennsylvania and Virginia. Initially in production at Elizabeth

New "Genetron" plant of General Chemical Division of Allied Chemical Corp., New York, located at Elizabeth, N. J. The facility, said it have an annual capacity in excess of 10,000 tons, will supply customer requirements in the Northeast.

are "Genetrons" 11, 12 and 22. "Genetron" 114 will continue to be supplied from bulk storage facilities at Elizabeth, which, in turn, are stocked from "Genetrons" produced at Baton Rouge, La.

"Isotron" Appoints Two

Richard C. Willson, Jr., now holds the post of technical service manager for "Isotron" products and Allen B. Reed, Jr., is supervisor of the "Isotron" aerosol laboratory, it was announced late in June by Pennsalt Chemicals Corp., Philadelphia.

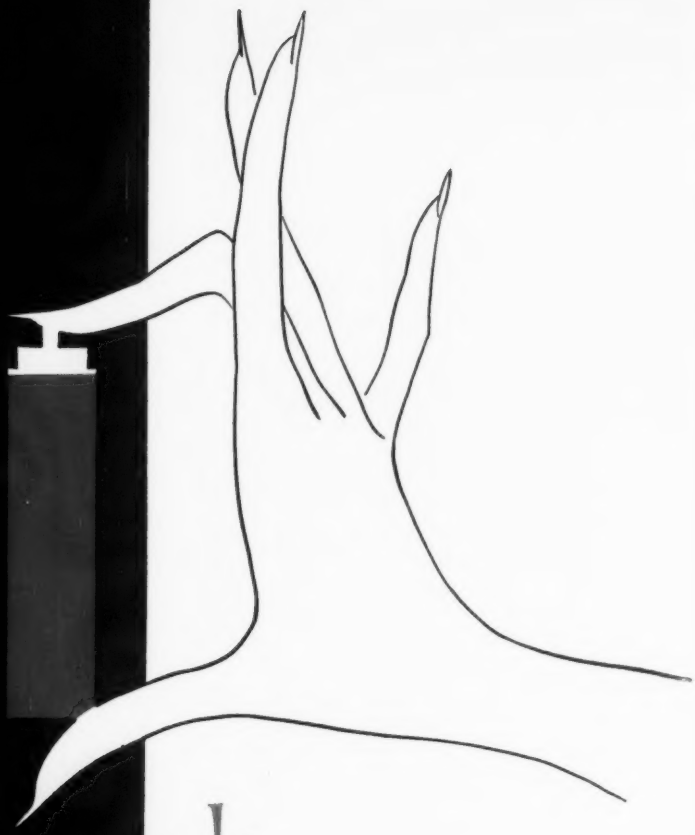
In his newly created position, Mr. Willson will be responsible for all aspects of technical service on the "Isotron" line of aerosol propellants, including engineering services and technical service laboratories. A 1952 graduate from Johns Hopkins University, Baltimore, he has held various technical service positions in Pennsalt's industrial chemicals division, has been associated with the "Isotron" department since its inception in 1956.

The aerosol laboratory, which Mr. Reed will supervise, provides customer service on special

Allen B. Reed, Jr.

Richard C. Willson, Jr.

Good things come in small aerosol packages



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and modified formulations, packaging techniques, and storage life studies. Mr. Reed has also been with the "Isotron" department since 1956. Prior to that he was employed as a development chemist in Pennsalt's technical division.

Both men will headquarter at the new technical service center at King of Prussia, Pa.

aerosol patents

No. 2,985,690. Compounds Produced by Radical Addition Reactions of Halogenated Olefins and Compounds Produced Thereby, patented by William T. Miller, Ithaca, N. Y., assignor by mesne assignments to Minnesota Mining & Manufacturing Co., St. Paul. Disclosed are compounds having the formula

$$CClF_2—R—CClFI$$

in which R is selected from the group consisting of $—CCl_2CF_2—$ and $—CClFCF_2—$ radicals.

Also claimed is a compound having the formula

$$CF_2ICF=CFCF_2CCl_3.$$

No. 2,984,421. Adjustable Aerosol Device, patented by John W. Hession, Jr., 28 Old Farm Road, Darien, Conn., assignor of one third to Sarah A. Hession and one third to Mark Allen Hession, both of Darien. Claimed is an aerosol fog spray device comprising an aerosol nozzle for generating a fog comprising liquid particles, the mass median diameter of which is in the order of about 15 to 20 microns and in which about 80% of said particles are less than about 30 microns in diameter and in which all particles are less than about 50 microns in diameter, said nozzle comprising a housing provided with a cylindrical recess having a conical inner end wall and an outlet orifice at the vertex of said conical inner end wall, a spool member axially slidably disposed in said cylindrical recess and having a tip portion, the extreme end thereof disposed adjacent to and axially spaced rearwardly from the outlet orifice about .004 to .006 inch, said tip defining with said conical end wall of said recess a frustoconical chamber, said spool member having gas passages open to said chamber adjacent the larger periphery thereof and angularly disposed with respect to the axis thereof to impart rotary motion to the gas entering said chamber and to produce a converging whirlpool of gas therein with the vertex adjacent said outlet orifice and forward of the extreme end of said tip, and means connecting said with a source of gas under pressure, said spool member having a nozzle portion projecting into said frusto-conical chamber and having an outer diameter of about .010 inch less than the diameter of said outlet orifice and thereby providing an opening comprising a restricted annulus extending rearwardly of the outlet orifice, said spool member having a liquid passage and a discharge opening in the nozzle tip portion disposed concentrically with respect to the axis of said frusto-conical chamber and said restricted annulus, liquid inlet means connected with said liquid passage, and means axially adjusting said spool member in said cylindrical recess to provide minute variations in the cross-sectional area of said restricted annulus by varying the axial clearance between the nozzle tip and said outlet orifice.

No. 2,984,420. Aerosol Devices, patented by John W. Hession, Jr., 9 Homewood Place, Darien, Conn. The invention covers an aerosol fog spray device comprising a body structure having a gas passage adapted for connection with a source of gas pressure supply, said structure having a frusto-conical chamber and an axial outlet orifice openly connected to the vertex thereof, said structure further provided with intermediate gas passages openly connecting said first passage with the larger end of said conical chamber, said intermediate gas passages being constructed and arranged to impart rotary motion to gas passing into said frusto-conical chamber to produce a swirling of the gas therein about the axis thereof with the converging center at the vertex adjacent the inner end of said outlet orifice, said body structure having a nozzle element extending axially, and concentrically within said frusto-conical chamber and provided with a fluid passage terminating at a fluid outlet opening disposed within the frusto-conical chamber and spaced axially inwardly of the inner end of said outlet orifice a predetermined distance, and nozzle element constructed and arranged to provide a constricted annulus in said conical chamber adjacent to and concentric with respect to said fluid outlet, and said fluid passage being adapted for connection with a source of fluid supply, said outlet orifice comprising a cylindrical passage of an axial length of about one-half the axial length of said frusto-conical chamber, said frusto-conical chamber having a slope angle with respect to the axis of about 45 degrees, said outlet orifice being about .010 to .015 inch larger on the diameter than the outlet end of said nozzle element, and said fluid outlet being disposed about .004 to .006 inch inwardly from the inner end of said orifice.

—★—

New Colton Brochure

A new four page, two color illustrated brochure describing Kingsley custom engineered timing screws is now available from Arthur Colton Co., Detroit. These screws pick up containers from a conveyor on a filling machine, capper, labeler, washer, counter, cottoner or similar type of packaging machine and discharge them at the required spacing for the operation.

Illustrated on the cover of the booklet are eleven typical floor waxes, cosmetics, pharmaceutical and food products that are currently handled by these feeding devices. Line drawings and photographs show engineering principles of the timing screws.

—★—

Aerosol Package Contest

Entries for the 10th annual Aerosol Package Contest, sponsored by the Chemical Specialties Manufacturers Assn. may be sent to CSMA headquarters beginning Sept. 1. The contest is open to any aerosol brand owner or marketer and is not restricted to CSMA members. Awards will be made in 15 product groups and a "best-of-show." Winners will be announced at the 48th annual CSMA meeting in New York, Dec. 4-6.

House, Garden Aerosols

(*From Page* 126)

humidity, and temperature are important factors. It is always surprising to see the African Violet grower who would not dream of watering plants with cold water in full sunlight literally soak the same plants with a plant spray aerosol in full sunlight at 95°F.

Misuse is the key to most plant damage caused by house and garden aerosols.

Summary

House and garden aerosols have firmly established themselves as products with utility and consumer appeal. The range of effectiveness is broad, including most of the common household and garden insect pests. The house and garden type of product is basically non-phytotoxic; however, plant damage can result from excessive use or failure to follow the directions. The major factor in plant damage appears to be caused by the temperature changes created by the aerosol propellant.

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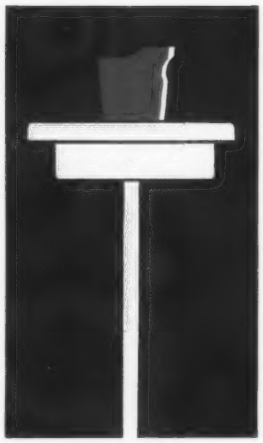

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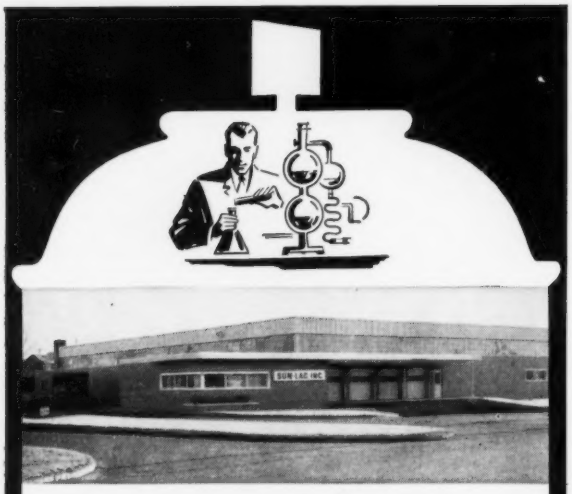

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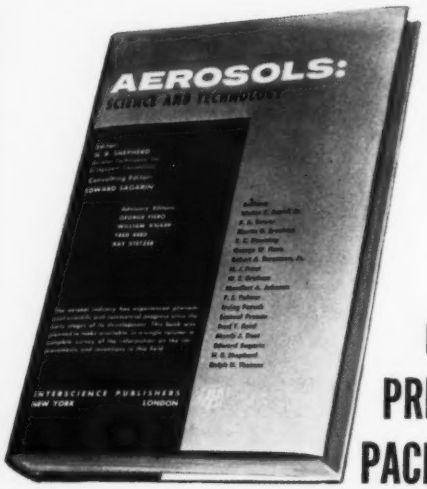

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Continuous Detergent Plant

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Bulletins and Equipment

This high speed detergent spray drying plant features continuous slurry mixing, electronic quality control, automated processing throughout. Engineered by Mario Ballestra of Milan, Italy, for Danish chemical specialties manufacturer C. Schous Fabriker A/S, Copenhagen, plant can turn out 3,000 kilos of detergent powder an hour. For details on novel process turn to article beginning on page 139.

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Continuous Detergent Plant

High speed, enonomy claimed for detergent spray drying plant, featuring continuous slurry mixing, electronic quality control

HIGH speed processing of spray dried detergents is accomplished by a novel plant which feeds continuously prepared slurry by an automated system to a spray drying tower. Designed and constructed by Mario Ballestra of Milan, Italy, such an installation was placed on stream last year at the plant of C. Schous Fabriker A/S., Copenhagen, Denmark. (Figure 1, page 137)

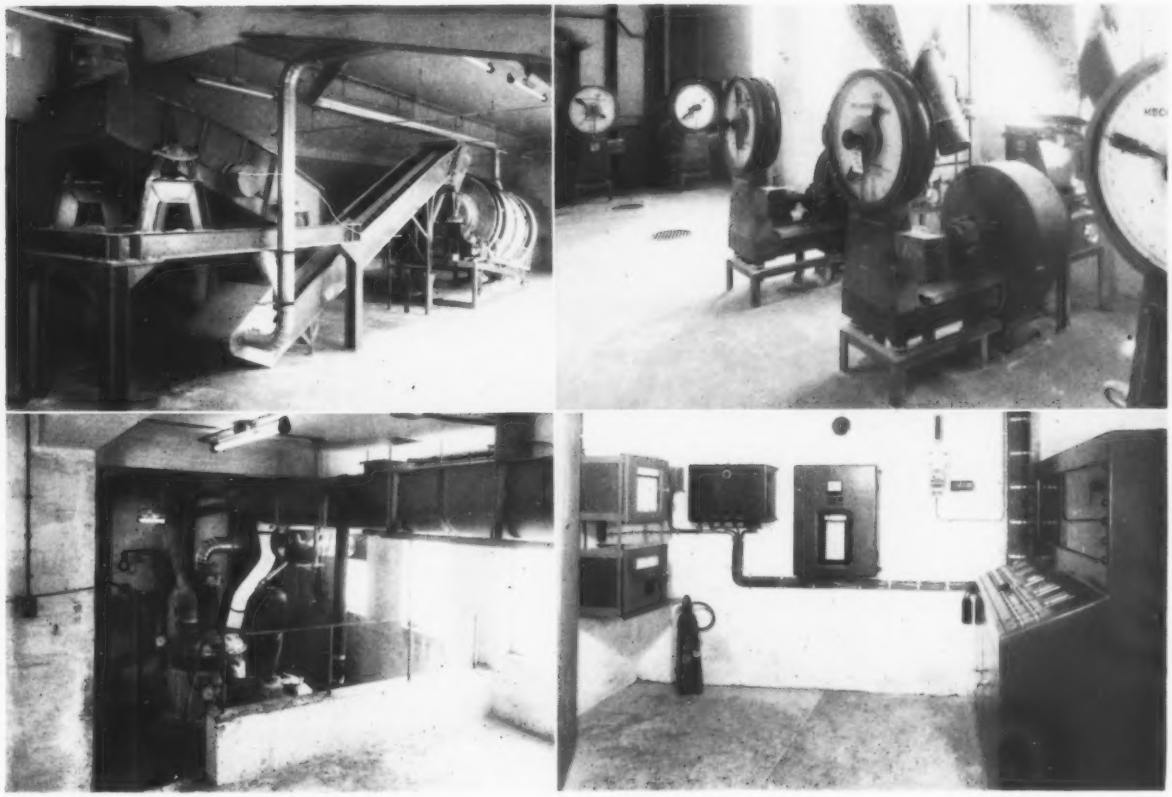
Capable of turning out 3,000 kilos of detergent powder an hour, the tower may be used for counter-current drying of heavy duty detergents; concurrent drying of light duty products; and for combined counter-current and concurrent operation.

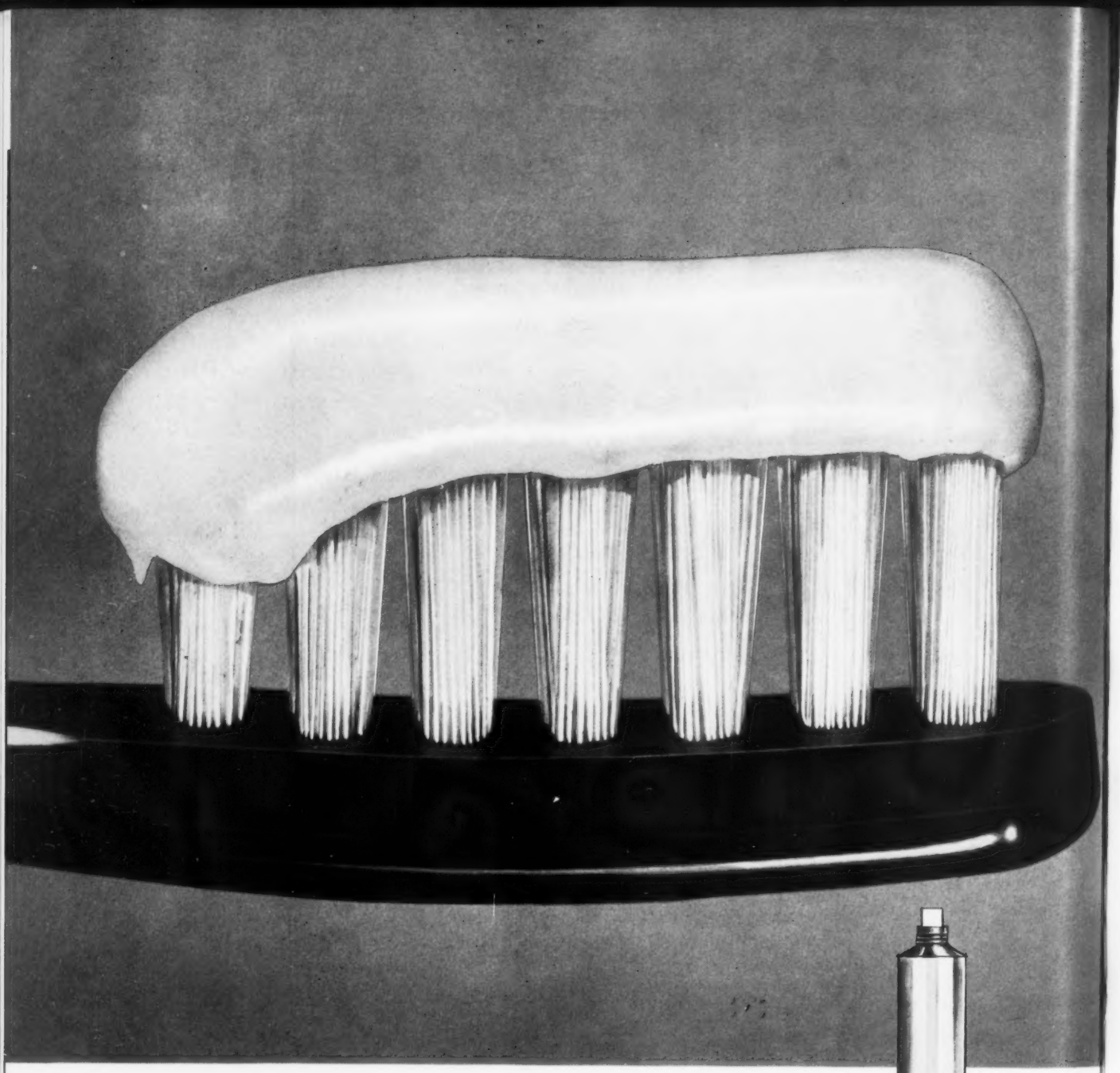
Three processing steps are required for the continuous preparation of the slurry, a feature which sets this plant apart from most spray drying installations where slurry is prepared by batch methods: Continuous dosage system for raw materials; a spiral conveyor for mixing and transport of powdered materials; and a premixer and final mixer for homogenization of the slurry.

Continuous Weighing

Five continuous weighers make up the dosage system at the Schous plant. Each of these has a feeding device, a magnetic valve for liquids, a vibrating feeder for powders. Each weigher (Fig 2.) features a drum rotating at constant (but adjustable) speed; a

Fig. 2, (top right) shows weighers for continuous proportioning of slurry ingredients, three for powder, two for liquid; Fig. 3. (lower left) shows spiral conveyor installed under powder weighers; Fig. 4. (lower right) Room below spray tower houses control panel for entire process, also specific gravity recorder and perborate feeding control. Fig. 5. (top left) Finished powder travels to perfuming drum.





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geared motor to drive the drum; and a balance which supports the drum. Operation of the weigher is illustrated in Sketch 1.

When the empty drum is in position (1) (see drawing), an electric control starts the vibration feeder or opens a magnetic valve. The drum continues its rotation at constant speed while being filled (with fluid or powdered material). Filling is completed within the period corresponding to a half revolution, namely between positions (1) and (2). As soon as the pre-set weight is reached, feeding of material is stopped by a photo-electric control, (i.e. the magnetic valve is closed, or the vibration feeder stopped).

Immediately before the drum reaches position (3), discharge of material starts, and is completed within a quarter of a revolution, i.e. between positions (3) and (1). Then the whole process repeats itself.

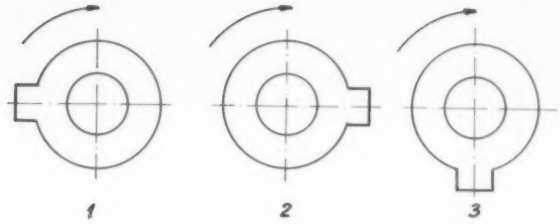
Powder Mixer Conveyor

A spiral conveyor positioned under three of the weighing drums transfers the powder by means of a worm to the slurry mixer. Actually the powder is being mixed as well as transferred by this unit. (Fig. 3).

Mixing of Slurry

The main slurry mixing unit consists of a cylindrical chamber housing a stirring mechanism. A strainer is fitted concentrically around the stirrer shaft which carries three propellers. Two of the propellers are inside the strainer, the third below the perforated disc which forms the bottom of the strainer and immediately above the floor of the mixing chamber.

Fluids and powders which make up the slurry are conveyed into the strainer where the two propellers draw the slurry down through the strainer and press it through the perforated plate. The third propeller imparts an upward motion to the mass. This arrangement provides for thorough mixing action.



Sketch 1. Rotating weigher drums.

From the main mixing unit the slurry travels by overflow to the bottom of the final mixing tank. Here, a stirrer with two thin circular blades provides gentle agitation. Actually, this tank is a feeding reservoir for the high pressure pump which conveys the slurry to the tower. The tank is equipped with a constant level regulator, which consists of a float operating a pilot motor. The latter, in turn, controls the five geared motors which drive the dosage drums. By this arrangement the rotating speed of the drums can be varied from the maximum of 3 rpm down to standstill.

When the tower is being started and only two or three nozzles are in operation the drums will run at speeds below the maximum and only when full capacity is reached the drums will rotate at 3 rpm. Should the flow from the final mixing tank fluctuate during a production run, the speed of the drums would be adjusted to maintain the amount of slurry in the tank at a constant level.

Advantages of this constant and automated slurry mixing plant are claimed to be economy in space and labor; elimination of human error in weighing; ease of formulation accomplished merely by adjusting dosage weighers; speed of mixing and short residence of slurry in reservoirs.

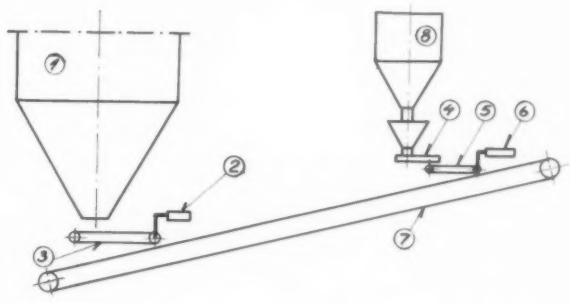
Perborate Feeder

The installation features an electrically operated perborate adding device, which can be varied to supply additions of from six to 15 per cent. This perborating system consists of a short conveyor belt immediately beneath the tower. The belt is suspended on a weighing cell which measures the actual momentary load. The weight is shown on an electronic indicator with a scale graduated in tons per hour.

This system is synchronized with another conveyor belt for the perborate. This belt also is suspended from a second weighing cell, which is connected with an another electronic indicator. The scale of this second indicator shows the momentary load in 100 kilos per hour. The second weighing cell controls — through a synchronized motor — a small vibrating feeder which doses perborate onto the belt. (Sketch 2).

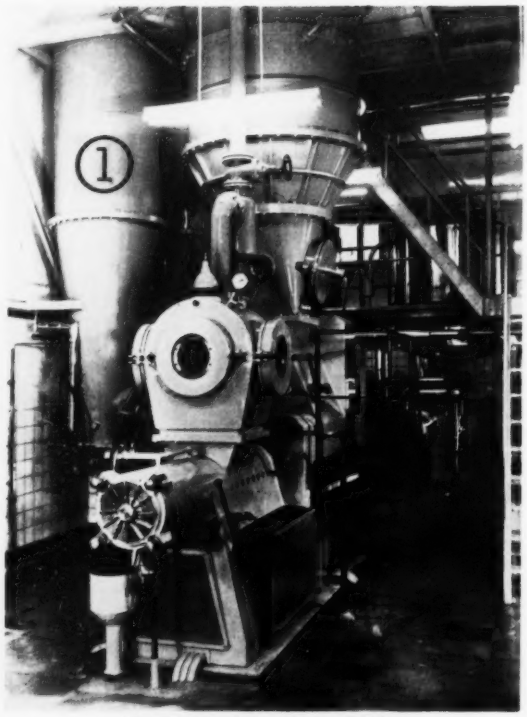
As shown in sketch 2, the perborating mechanism performs the following sequence of steps: When the powder drops from the tower (1) onto the belt (3) the weighing cell (2) communicates

(*Turn to Page* 144)



Sketch 2. Electronic perborating system.

G. MAZZONI, S. P. A.



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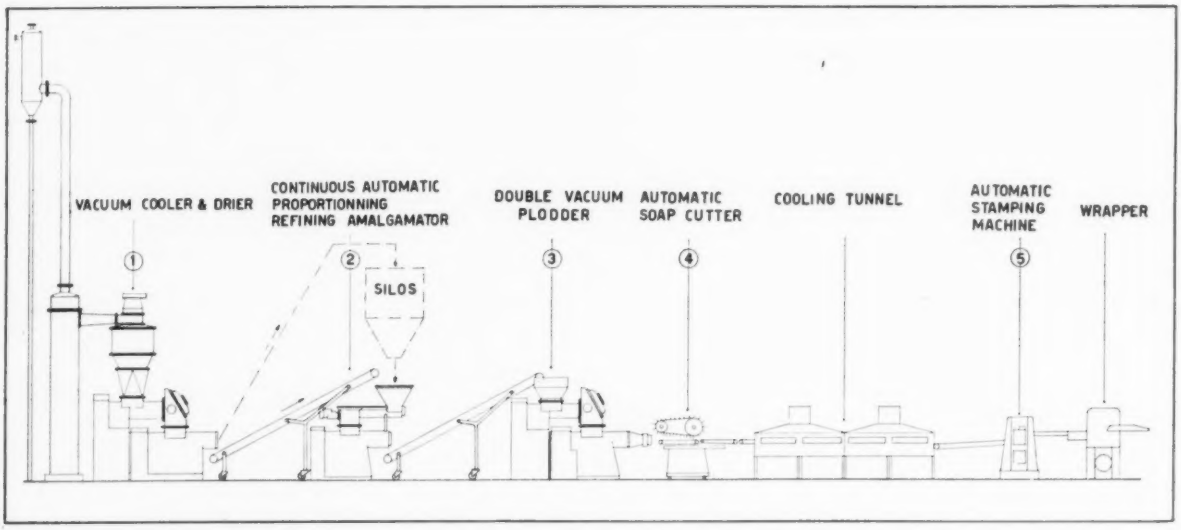

Layout of our continuous toilet soap line. Fully continuous or batch processing possible using chips silos. Our line automatically produces fully refined, first class toilet soap with no roll mills. The individual machines that are employed in the above sketch appear on this and the facing page. A complete line or individual units are available with production capacities of 250 to 1500 Kgs. per hour

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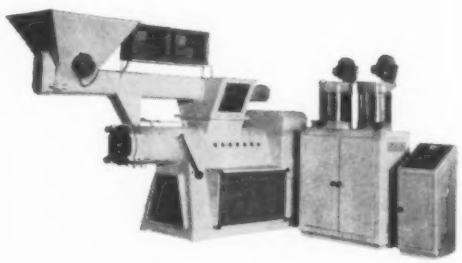

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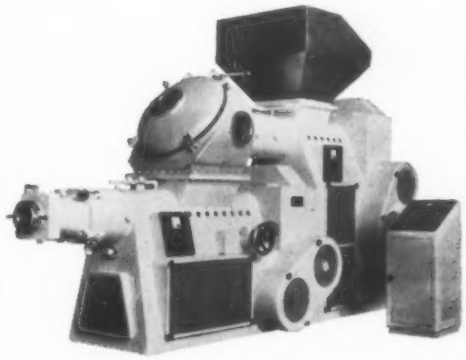

DUPLEX — DOUBLE VACUUM PLODDER

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appear as numbered in production line diagram on facing page.

4

AUTOMATIC SOAP CUTTER "TV"

Adjustable cutting length by means of handwheel

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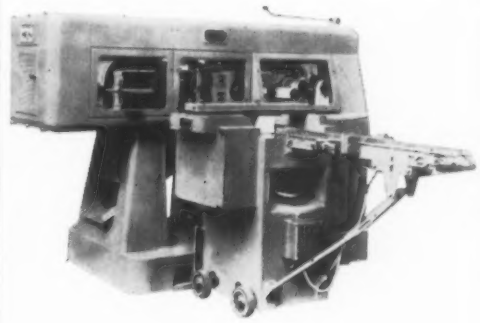

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Your inquiry is welcomed! We send, without obligation, data sheets and other literature on this equipment. Let our staff solve your manufacturing problems! We want you to get the most from your raw materials!

(*From Page* 141)

the weight of the load on the belt both to the electronic indicator and to the weighing cell (6).

Weighing cell (6) now activates the vibration feeder (4) which begins to dose perborate onto the conveyor belt (5). The electronic indicator connected to weighing cell (6) has an adjusting device which permits variation of perborate additions from six to 15 per cent.

Assuming the preset perborate percentage is eight, the synchronized motor accelerates the vibrating feeder (4) to deliver perborate at the rate of eight per cent of the load of powder dropped onto the belt (3) beneath the tower. Any fluctuations in tower output will be compensated to maintain the perborate addition at the preset percentage.

When the powder has been weighed on belt (3) it flows onto the conveyor (7) which passes beneath the perborate belt (5) where the addition is actually made.

Another feature of the Schouls detergent plant is an electronically controlled continuous specific gravity control system, which corrects any fluctuations by adjustment of the slurry delivery to the tower.

All phases of the process, except the opening of the spray nozzles at the top of the tower, are operated from a control panel located in a room below the tower. The recorder plotting the specific gravity curve and the electronic indicators connected to the perborate feeding system are also housed in this room. Daily tower output is plotted on a graph and total production of the plant is automatically recorded (Fig. 4).

Once the powder has been perborated it travels on conveyor (7) to a pneumatic lift which carries it to a silo. In transit the powder is also being cooled.

From the silo, the powder flows onto a vibrating screen where any lumps are removed. Next it is transferred by conveyor belt (Fig. 5) to a mixing drum where perfume is added. The powder then is conveyed to the packaging floor immediately below this last processing station.

The entire process, from the weighing of the raw materials for the slurry to the discharge of the finished product to the packaging floor, is said to require 15 minutes.

—★—

Calgon Liquid Detergent

A new liquid detergent, "Superglo,"' said to be equally effective in hot or cold, hard or soft water, is the subject of a new bulletin recently issued by Calgon Co., a division of Hagan Chemicals & Controls, Inc., Pittsburgh.

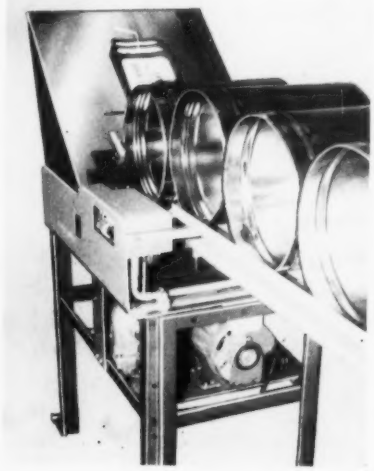
"Superglo" is suitable for handwashing tableware, pots and pans, kitchen equipment and for cleaning porcelain and stainless steel. The detergent is nonirritating to hands and will not corrode aluminum or soft metal, according to Hagan.

—★—

New Labelette Labeler

An automatic container labeler with an electric feed for speeding up the labeling process on a diversified product line has been introduced by Labelette Co., Chicago. Model 12 is designated to fill the need of an intermittent labeling machine capable of handling up to five gallon containers and smaller sizes in a diversified product line. The unit, operated by one man, can affix spot, face, or wrap-around labels on metal, tin, glass, plastic or fiber containers. A different size can be accommodated by a simple chain adjustment.

Automatic electronic feed labeler, designated Model 12, recently introduced by Labelette Co., Chicago.



The labeler features a mobile floor stand with casters, nonjamming glue attachment, label register mechanism and one-half horse power motor with variable speed control.

—★—

Pennsalt Joint Filler

"Flexjoint," a chemically resistant joint filler said to have a high degree of load bearing ability has been recently developed by the corrosion engineering products department, Pennsalt Chemicals Corp., Natrona, Pa. Product is said to bond to both concrete and brick surfaces with greater strength than the materials its joins. The new filler, claimed to resist a variety of chemicals, remains flexible over a wide temperature range. Formulated in both a pouring grade and caulking grade, the filler has a claimed pot life of 25 minutes after mixing. Said to set in three hours and cure in 24, "Flexjoint" is available in either black or gray.

—★—

New Polymer Floor Polish

Hillyard Chemical Co., St. Joseph, Mo., recently announced "Improved Poly-Kote," a clear, non-yellowing, synthetic, water emulsion coating, claimed to produce a long lasting, high gloss finish. Company states product can be patched and blended in without recoating the entire floor; and can be buffed after cleaning to restore original lustre. "Poly-Kote" is said to become more "non-skid" when wet with water, and may be removed when stripping is necessary, without damage to resilient flooring. It is claimed to have good spreading and leveling qualities.

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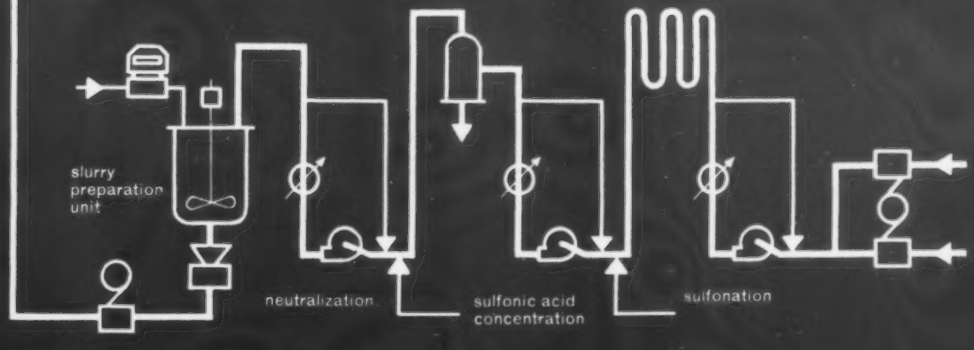

09

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soap plant observer

By Willis J. Beach,
Technical Service Department,
Sugar Beet Products Co.

SAFETY measures are an important aspect of installations for automatic weight and flow control of liquids, such as we described recently in this column. Intelligent consideration of safety factors is required no matter whether mechanical tank, hopper or overhead scales are being installed and used.

All scales placed on the market by reputable manufacturers are designed and constructed with adequate safety factors for the loads and usage for which they are intended.

When buying an automatic weight control system one should make sure that his new scales are equipped with correct safety devices. He should give the manufacturer full information and load application regarding intended loads, so that correct scale capacity can be specified. Any unusual or abnormal conditions in the plant should also be pointed out.

Although various parts of scale systems incorporate adequate safety factors, these can be exceeded under certain conditions of use. Some of these adverse conditions are listed in a pamphlet on safety recommendations published by the Scale Manufacturers Association, Inc., Washington, D. C.:

"1. The structures supporting the scale can flex or settle.
2. Building vibration, or vibration transmitted from adjacent equipment, can result in maladjustment or fatigue of equipment parts.
3. The commodity being weighed can be applied so as to produce an overload, or a mispositioned load.
4. Unusal shock conditions from external sources.
5. Shock results can be produced by product reactions.
6. Inattention to preserving proper adjustment of supporting members."

Undue stress may occur on critical scale parts from the above-listed conditions and cause failure of the part or inaccurate or sluggish scale performance.

Certain positive safety measures can be taken in the use of hopper scales, tank scales, or overhead scales to protect against the above hazards and guard against damage, should hazards materialize. The association's bulletin lists the following,

"1. Chain or cable slings
2. Piers
3. Other structures such as beams or rods on which the commodity receptacle could safely drop.
4. Nuts or supporting bolts at both ends of supporting rods must be prevented from turning by double-nutting, pinning, staking or other means.
5. Frequent safety inspections of scales, and of all screws, nuts, bolts, cotter keys, or welds comprising parts of the supporting members."

Of course, the exact character of the hazards and the safety devices needed will depend on the specific installation. It is up to the scale user to recognize these and arrange for proper safety measures.

A Stranger in Your Line?

A sample of waterless hand cleaner came to our attention recently. It was sent in for our evaluation, and without comment. A somewhat specialized type of cleaner, it was designed primarily for removing carbon smudge, duplicating and printing inks as well as the usual grease and grime and "most other stubborn soils and stains" — a pretty ambitious claim!

The product was a lotion type cleaner of quality appearance and scent, and packaged in an attractive plastic bottle. It had considerable cosmetic appeal until it was rubbed onto the skin to remove soil. Unfortunately, it was quite greasy both in application-feel and — upon wiping off — in after-feel. It left the user with a distinct desire to go and wash his hands. We have seen several such products and they never gain full acceptance. Our comment was: "Too greasy, will never sell."

We learned later that some 20,000 units had been made up for the vendor. The first 5,000 went well (probably to fill the marketing pipeline); the other 15,000 are still on hand and aren't moving.

This drives home a point worth pondering: The firm intending to market the product had no experience in manufacture or sale of a skin cleaner, and the firm they selected to produce the product makes wall paper cleaners.

When you decide to include in your line a chemical specialty with a function far afield from your experience, be sure to consult with a specialist in this type of product, or at least have the product made by a firm well established in the line of the specialty.

New Flooring Compound

The corrosion engineering products department, Natrona, Pa., of Pennsalt Chemicals Corp., Philadelphia, recently developed a tough resilient topping for concrete floors. The product, "Penntrowel Latex," is a two-component mortar, "Penntrowel Latex Binder,"liquid dispersion packaged in five-gallon steel drums, and "Penntrowel Latex Filler," dry cement-aggregate premix, packaged in 70 pound bags. Five bags of filler mixed with one five-gallon drum of binder, is said to form a trowable mortar. A minimum thickness of ¼ inch is recommended for normal traffic loads, able to carry pedestrian traffic within 24 hours. Peak performance is said to be attained after three days curing.

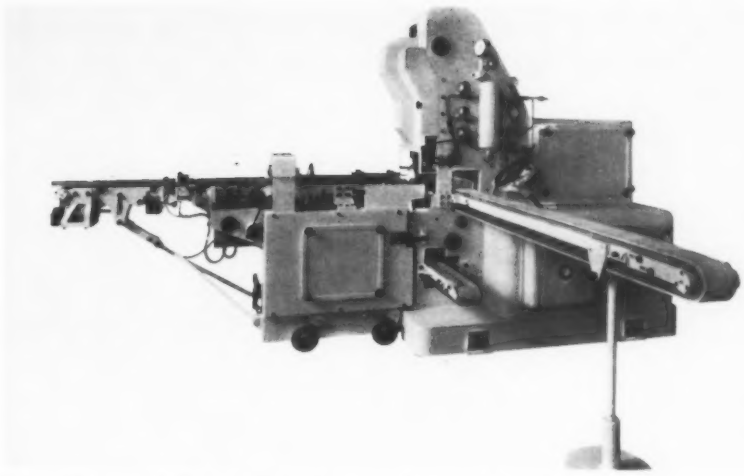
—★—

New Stoneware Tumbler

Drum tumblers with built-in hydraulic lifts for raising 55-gallon steel drums to proper height for clamping into position on the tumbler, have been introduced by U. S. Stoneware Co., Akron, O. The units are a modification of the firm's standard line of Fig. 730 Drum Tumblers, and incorporate the additional feature of a loading platform which can be raised or lowered under control, from a three way hydraulic valve.

The drum is placed on the platform, inside the holding clamps which are in open position. The platform is then raised under power from a separate motor which operates the hydraulic system. When drum has reached the proper level, clamps are locked around it. The platform is then lowered, and the drum is rotated by the main tumbler motor.

Hydraulic lift drum tumbler recently introduced by U. S. Stoneware Co., Akron, O. Unit is explosion-proof throughout, for operating in volatile atmospheres, the company states.



New Mazzoni Soap Stamper

Precision, economy, and a wide range of processing speeds are claimed for a new automatic toilet soap stamping machine, introduced recently by G. Mazzoni S.p.A., Busto Arsizio, Italy. Operating simultaneously two capacity dies, the unit can be adjusted to stamp from 2,400 to 12,000 oval cakes of toilet soap an hour, Mazzoni claims.

Utmost precision and regularity of shape is said to result from a new electromagnetic device featured by the machine.

Blanks are fed from the cutter into the stamper by means of "mechanical fingers." Discharge of the moulded soap cakes is accomplished by vacuum suction. Movements of the stamper and feeding of blanks are synchronized by a photoelectric device, insuring smooth automatic operation.

Model "STO/Duplo" stamper is the first to work simultaneously with two capacity dies, according to Mazzoni, who designed the machine.

Rebuilt Machinery Bulletin

Irving Barcan Co., 249-51 Orient Ave., Jersey City, N. J., recently announced the availability of a bulletin listing the firm's partial stock of rebuilt chemical and process machinery.

—★—

New Solvent Cleaner

A new safety solvent featuring detergent action plus controlled evaporation was introduced recently by Turco Products, Inc., 24600 South Main Street, Wilmington, Calif. The solvent is said to stay wet and work just long enough to clean thoroughly in a minimum of time.

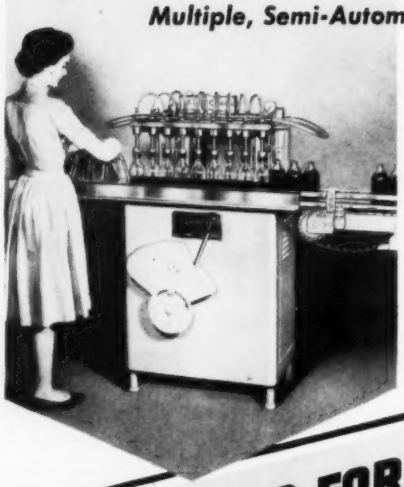
"Turco-Solv" contains a detergent additive and is designed for in place spray cleaning of electrical equipment. Said to be noncorrosive and nonconductive, the product minimizes toxicity and flammability problems and is economical in use, due to the controlled evaporation feature built into its formula.

—★—

New Pylam Hair Colors

A new line of purified oxidation colors, "Pyloxidyes," for hair dyes, is now available from Pylam Products Co., New York. Shades of red, gray, brown and black are being offered to hair dye manufacturers, packaged in quantities of from one to 100 pounds. The firm also supplies the cosmetic industry with a complete line of certified colors for shampoos.

Multiple, Semi-Automatic Filler



MODEL B-49 STRAIGHTLINE VACUUM FILLER

Fills 4 to 9 containers simultaneously. Lever engages and disengages filling stems, otherwise operation is automatic. Adjustable for container heights up to 14". Stainless steel construction; plastic available. Discharge conveyor optional. Write for "Bulletin B-49."

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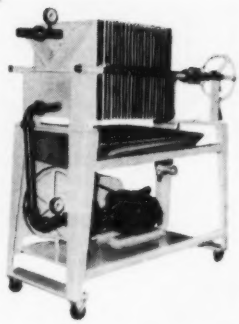

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new patents

Listed below are brief abstracts of recently issued patents. Complete copies may be obtained from the publisher of this magazine: — MacNair-Dorland Co., 254 W. 31st Street, New York 1, N. Y. Remit 50¢ for each copy. For orders received from outside of the United States send $1.00 per copy.

No. 2,982, 736. Method of Preparing Washing Composition, patented by Vladimir Dvorkovitz, Kansas City, Mo., and Jerome Arthur Goldman, Evanston, Ill., assignors to the Diversey Corp., Chicago. The patent teaches the process of producing a particulate detergent composition consisting essentially of a nucleus of inorganic material and a coating of a relatively neutral, reaction-set salt of a synthetic organic, acidic wetting agent, which comprises: spraying solid particulate in organic alkaline material which serves as a detergent builder with about 0.5—50% by weight, based on the weight of the reaction mixture, of a substantially anhydrous normally slow-reacting member of the class consisting of higher alkyl aryl sulfonic acids, higher alkyl sulfonic acids, higher alkyl sulfuric acid esters, the alkyl groups in said sulfonic acids and said sulfuric acid esters containing about 12—18 carbon atoms and admixtures thereof in the presence of at least about 20% by weight, based on the weight of said reacting members, of a substantially anhydrous reaction promoting liquid consisting essentially of a member of the group consisting of lower alkylene glycols having about 2—4 carbon atoms, lower alkyl alcohols having about 1—4 carbon atoms, concentrated sulfuric acid, and admixtures thereof, whereby said member is completely reacted with said alkaline material during a period of up to about 5 minutes and a dry, solid, coated, finely divided detergent composition is produced at once during the neutralization reaction.

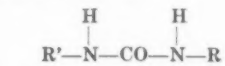
No. 2,983,684. Soap Composition Containing Lime Soap Dispersant, patented by William K. Langdon, Grosse Ile, Mich., assignor to Wyandotte Chemicals Corp., Wyandotte, Mich. Disclosed is an improved soap composition comprising a fatty acid soap selected from the group consisting of sodium, potassium and ammonium fatty acid soaps and, as a lime soap dispersant, a mixture of conjugated polyoxypropylene-polyoxyethylene compounds containing in their structure oxypropylene groups, oxyethylene groups and an organic radical which is the residue of a nitrogen atom-containing reactive hydrogen compound having at least two reactive hydrogen atoms, said compound being selected from the group consisting of ammonia, lower alkyl primary amines having up to about 5 carbon atoms, lower alkanolamines having up to about 4 carbon atoms in the alkanol radical, aniline, hydrazine, N,N'-di(lower alkyl)-hydrazines having up to about 4 carbon atoms in the lower alkyl radicals, phenylhydrazine and aliphatic primary polyamines having up to about 6 carbon atoms, the structure of the lime soap dispersant compounds being such that all of the oxypropylene groups are present in polyoxypropylene chains that are attached to the organic radical at sites of reactive hydrogen atoms thereby constituting a polyoxypropylene polymer, the oxyethylene groups being attached to the polyoxypropylene polymer in polyoxyethylene chains, the average molecular weight of the polyoxypropylene polymers in the mixture being from 900 to about 50,000, as determined by hydroxyl number, and the oxyethylene groups present in the mixture constituting 20—90,% by weight, of the mixture, and the proportion of said lime soap dispersant in the composition being sufficient to materially reduce the formation of lime soap curds in hard water.

No. 2,979,748. Soap Bar with Scrubbing Bristles, patented by Guy M. Beatty, P. O. Box 1364, Bakersfield, Calif. Covered is a cleansing agent comprising a bar of soap, bristles embedded in the soap having ends exposed at the surface of the bar, said bristles being creased at intervals so as to break off as the soap wears away whereby to maintain stiff, exposed bristle ends at the bar surface.

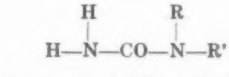
No. 2,982,735. Detergent Milled Bar and Process of Preparing Same, patented by Joseph Blinka and Preston W. Grounds, Jr., Cincinnati, assignors to Procter & Gamble Co., Cincinnati. This patent covers a detergent milled bar having a characteristic soap-like feel, comprising 10% to 35% normally solid, water-soluble sodium soap and 15% to 40% of a normally solid anionic synthetic detergent comprising a water-soluble, alkali metal salt of an organic sulfuric reaction product and a gelatinized non-waxy starch, said gelatinized starch being characterized by the disappearance of anisotropy and constituting not less than 15%, nor more than 70% of the bar, the sum of said synthetic detergent and said sodium soap being between 25% and 65%.

No. 2,982,738. Cleansing Composition and Method of Manufacture Thereof, patented by Irving Rudolph Schmolka, Astoria, N. Y., assignor to Colgate-Palmolive Co., New York. Described is a cleansing composition in gel form comprising 50—98% of an alkane of boiling range between 350° F. and 500° F. and 2—50% of a water soluble salt of a higher fatty amide of sarcosine, the higher fatty acyl radical being of 10—18 carbon atoms, with the proportion of said sarcosine amide being sufficient to form a gel with the alkane.

No. 2,985,592. Detergent Composition, patented by Wayne L. St. John, Wyoming, O., assignor to Procter & Gamble Co., Cincinnati. This invention reveals a cleansing and laundering composition having improved sudsing power at dishwashing temperatures, consisting essentially of at least one synthetic organic detergent component selected from the group consisting of the water-soluble anionic sulfate and sulfonate detergents as the essential cleansing agent and as a suds-promoting agent an alkylurea glycoside selected from the group consisting of



and



wherein R is a higher alkyl radical of about 10 to about 15 carbon atoms and R' is a carbohydrate selected from the group consisting of monosaccharides and reducing disaccharides, the amount by weight of said alkylurea glycoside being not greater than the amount of the detergent but sufficient to increase the sudsing performance thereof.

No. 2,982, 739. Detergent Additives, patented by Vladimir Dvorkovitz, Kansas City, Mo., and Neil W. Berst and George G. Leist, Evanston, Ill., assignors to Diversey Corp., Chicago. Revealed is a nonacid detergent composition having an additive which reduces the skin irritation that is normally induced by nonacid detergent compositions, said composition consisting essentially of: a synthetic organic detergent from the group consisting of sodium higher alkylbenzene sulfonates and higher alkyl phenyl ethers of polythylene glycol, and at least 0.1% by weight, based on total solids, of a water-soluble additive which reduces the skin irritation normally induced by said organic detergents, said additive being a member of the group consisting of gluconic acid and water-soluble alkali metal salts thereof, said synthetic organic detergent being present in said composition in an amount in excess of said additive.

The composition is also claimed which includes an alkaline inorganic detergent which serves as a detergent builder.

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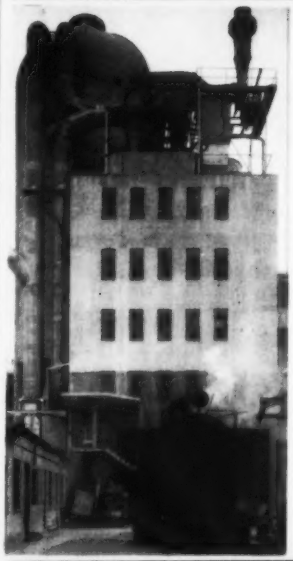

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CHEMICAL WORKS

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products and processes

Floor Polish Formulations

Formulations for various types of floor polish are given by Jose Zevallos in the June issue of *By Gum*, external house organ of Reichhold Chemicals, Inc., White Plains, N. Y. Formula 607-28 I, a high quality hard finish is designated A; 607-31E, a semi-buffable finish is designated B:

Step 1. Make wax emulsion as follows:

	A grams	B grams
"Epolene" (Eastman)	40	100
Duroxon J-324" (Dura)		100
Oleic acid	7	40
Morpholine	7	20
Water	170	885

Procedure

1. Heat wax and oleic acid to 115°-120°C. with stirring;
2. Add morpholine. (Caution: Heat only long enough to insure complete mixing)
3. Pour molten wax into hot water (95°C.) with vigorous agitation.
4. Cool rapidly to room temperature, add water to give desired solids.

Step 2. Make up a "1582 Waterez" (Reichhold) solution as follows:

	A and B grams
"1582 Waterez"	160
Ammonia 28°Be	80
Water	760

Procedure

1. Add one half of the total ammonia to cold water.
2. With gentle agitation, add the resin in small increments.
3. Add balance of ammonia.

Step 3. Mix final floor finish by weight:

	A parts	B parts
Wax emulsion, 16% solids content, step 1	18.0	29.0
"1582 Waterez" solution, 16% solids, step 2	10.0	10.0
"40-201 Synthemul" (Reichhold) styrene emulsion, 36% solids	6.5	6.5
Water	44.0	39.4
"40-431 Synthemul" acrylic emulsion, 40% solids	20.0	14.5
2-Pyrrolidone (Antara)	0.9	
"Benzoglex P-600 (Tennessee)		0.3
Diethylene glycol	0.4	0.8
"KP-140" (Ohio-Apex)	0.2	0.5

—★—

New Antifoam from Carbide

A new foam preventive and foam quelling fluid is available from the Silicones Division of Union Carbide Corp., New York, it was announced in June. Said to be an improved version of Carbide's "SAG 47" antifoam, the product is said to quell foam in non-aqueous and some aqueous systems and to be able to control foam levels without entirely suppressing foam formation.

The product is nonvolatile and therefore effective even at elevated temperatures. Improved storage life and stability are claimed for the new antifoam. It is suggested for use in the manufacture of cleaners, soaps, detergents, hydraulic fluids, and other basic and compounded products. A starting concentration of 10 to 100 parts of "SAG 47" fluid per million parts of foamer is recommended for antifoam applications.

—★—

Alum in Syndets

Cutaneous properties of synthetic detergents are improved by incorporation of minor proportions of alum. A three per cent addition of alum to alkyl aryl sulfonate or alkyl sulfate based compounds is suggested. British patent 838,181, Chalk Products Ltd., London.

—★—

Steam in Soap Plant

High speed evaporators as source for processing steam in the soap plant are feasible where salt and gas free water is available for this use. The engineering and economics of such an installation are analyzed in an article by Rudolf Rasch, *Seifen-Oele-Fette-Wachse*, March 29, pp. 161-165.

Adaptability to fluctuating steam consumption is one of the main advantages offered by this source of processing steam. It may be adopted to supplement the output of an insufficient boiler plant during periods of peak hours. A number of other contingencies where this source of steam may be desirable are envisaged and discussed in detail.

"Ringless" Stain Remover

A stain remover said to eliminate formation of a "halo" may be formulated from one or more selected aromatic, aliphatic and halogenated hydrocarbons, an anti-dryer such as rectified petroleum jelly, a gelatinizer which is silica gel, and filler. The filler may be talc or bentonite.

In addition to avoiding ring formation around the stained area, such a compound is said to absorb stain residues left on the cloth and to be easy and rapid in use. British patent 838,025, C. Vanoni, Varese, Italy.

—★—

Shoe Stripper?

A solvent based leather cleaner which removes not only soil but also polish build up from shoes and other leather goods is suggested by an anonymous contributor to *Seifen-Oele-Fette-Wachse* (March 29, p. 166).

The solvent is to be mineral spirits, which may contain 5 per cent wax to avoid excessive stripping of wax from sensitive leathers. Treatment with such a product would be followed by application of polish in the usual manner.

—★—

New Pfizer Bulletins

"Morpel" X-803 and X-914 sodium sulfonates and "Morcowet" X-327 sodium salt of a sulfated alkyl ester are described in data sheet No. 559, issued recently by Chas. Pfizer & Co., 235 East 42nd Street, New York 17.

The "Morpels" are used as catalysts for splitting low grade fats and greases and in the manufacture of textile chemical specialties. "Morcowet" also is used in the textile processing industries.

At the same time Pfizer issued a data sheet (No. 558) dealing with Gibberellin for agricultural and horticultural use.

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P&G Executive Changes

Dr. Reginald C. Sherwood, who retires next month as vice-president and technical director of Stevens Chemicals, Inc., New York, is being honored by the establishment of an annual scholarship award in his name at the University of Minnesota. The scholarship is being created through a fund contributed by Stevens in honor of Dr. Sherwood's lifetime contributions to the field of food technology.

Want more gloss? Less slip? Better leveling? You get all three when you formulate self-polishing floor waxes with Mantrose shellacs. And more.

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NEWS

Procter & Gamble Executive Changes

KELLY Y. Siddall, administrative vice-president and a director of Procter & Gamble Co., Cincinnati, retired June 30, after 35 years with the company. He is succeeded as a board member by Dean P. Fite, who has been named vice-president of corporate affairs. Mr. Fite was formerly vice-president and comptroller.

Kelly Y. Siddall

Dean P. Fite

C. Kenneth McCracken, formerly a vice-president of the company, has assumed the new title of vice-president, in charge of finance. Richard S. Runnels, formerly associate comptroller, has been named comptroller of the company.

Mr. Siddall, who joined the company in 1926, was named comptroller in 1942, and was elected vice-president and comptroller in 1954. Mr. Fite, who joined P&G in 1937, became chief accountant of the firm in 1955, comptroller in 1958, and vice-president and comptroller in February, 1961.

Mr. McCracken joined P&G in 1926 and has been a vice-president of the company since 1957. Mr. Runnels, who joined the firm in 1947, was named division accountant for the food products division in 1955.

C. Kenneth McCracken

Richard S. Runnels

★

Breck Names Spadoni

Appointment of Henry F. Spadoni, Jr., to the newly created position of packaging manager for John H. Breck, Inc., Springfield, Mass., was announced recently. Mr. Spadoni, who joined the firm in 1958, is in charge of all packaging activities. Prior to his appointment, he was assigned to the technical service section of the Breck research and development laboratories.

★

Crystal Soap to Build

Crystal Soap & Chemical Co., a subsidiary of Huntington Laboratories, Inc., Huntington, Ind., recently purchased a seven acre tract in Lansdale, Pa. The firm will erect a building of approximately 40,000 square feet on the site for manufacturing and warehousing sanitary maintenance products, process chemicals and related items.

★

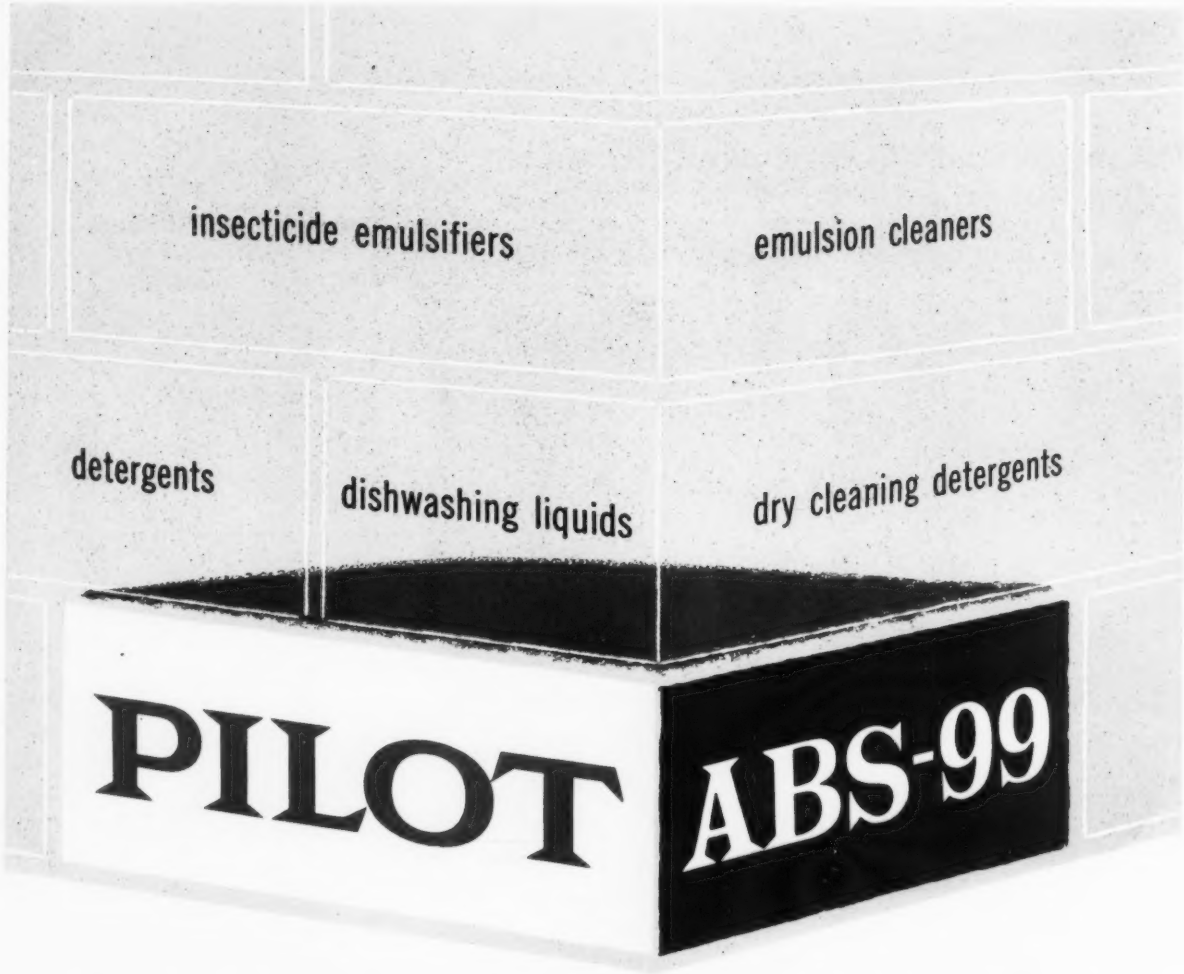
New Simoniz Line

Simoniz Co., Chicago, has just entered the marine accessory field with a new line of boat care products. Included in the line are a heavy-duty hull and deck cleaner, a fiberglass cleaner-gloss and a heavy-duty marine sponge that remains soft after drying, according to the company. The cleaner gloss, is priced at $1.98 for an eight ounce can, and the heavy duty hull and deck cleaner, packed in 16 or 28 ounce spray cans, are priced to sell for $1.49 and $1.79, respectively.

★

Louis MacLeod Dies

Louis H. D. MacLeod, 65, former national accounts sales manager for Lever Brothers Co., New York, died June 19, in Massachusetts General Hospital, Boston, after a short illness.



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Whether you formulate shampoos for rugs, cars, or heads, or many other surface active products marketed today – Pilot ABS-99 is your cornerstone for making them better!

ABS-99 is a *98% pure sulfonic concentrate* – the highest commercially available – that you can keep in *plain steel* containers, pump or pour, and neutralize without bleaching.

ABS-99 has outstanding stability, detergency and sudsing character which are a result of Pilot's unique ice-cold, dilute, air-free vacuum sulfonation.

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Basic Processors of Hydrocarbons for
Sulfonate Flake
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Sulfonic Concentrates

Hart Heublein President

Ralph A. Hart, formerly executive vice-president of Colgate-Palmolive Co., New York, and president of Colgate International, has been appointed president of Heublein, Inc., New York, it was announced recently. He succeeds John G. Martin, president since 1937, who continues as chief executive officer. Heublein is a producer and importer of liquor and foods.

Ralph A. Hart

—★—

Lehn & Fink Names Kidder

Amos M. Kidder, III, has been appointed brand manager of the Lehn & Fink Division, Lehn & Fink Products Corp., New York, announced recently. He has been assigned to "Stri-Dex" medicated pads, and to other new products now in the process of development.

—★—

P & G Top TV Advertiser

Procter & Gamble Co., Cincinnati, was the leading television advertiser for the first quarter of 1961, with an estimated expenditure of $11,822,052, according to a recent announcement by the Television Bureau of Advertising, New York.

Runner-up to P & G is American Home Products Corp., New York, with an estimated expenditure of $9,159,200 for the first quarter.

Among the other large investors in network television for the same period were Lever Brothers Co., New York, $6,368,678, and Colgate-Palmolive Co., New York, with $5,137,224. Total advertising for soaps, cleaners and polishes increased from $17,936,562 for the first quarter of 1960, to $21,030,547 for the 1961 period, it was reported.

—★—

Sanitation Show

The 6th Annual Sanitation Maintenance Show will be held September 26-28, at the Hotel Sheraton, Philadelphia, it was announced recently. Sponsored by the Institutee of Sanitation Management, it is expected to attract 3500 representatives of industrial plants, commercial buildings and institutions, plus the national ISM group of over 1,000 members. ISM membership is comprised of six divisions: buildings, consultants, food processing, industrial, institutions, and mill and bakery.

The following firms have reserved space at the exhibit:

Airkem, Inc., New York; D. J. Alexander Corp., Philadelphia; American Lincoln Corp., Toledo; Breuer Electric Mfg. Co., Chicago; C. B. Dolge Co., Westport, Conn.; Geerpres Wringer, Inc., Muskegon, Mich.; R. M. Hollingshead Corp., Camden, N.J.; Horizon Industries, Minneapolis; Multi-Clean Products, Inc., St. Paul, Minn.; Noxon, Inc., Jersey City, N. J.; Stevens and Thompson Paper Co., New York; Towlsaver, Inc., Los Angeles; Vestal, Inc., St. Louis, Mo.; West Chemical Products, Inc., Long Island City, N. Y.; and White Mop Wringer Co., Fultonville, N.Y.

—★—

Shulton Appoints Bangs

Appointment of John K. Bangs as assistant corporation secretary of Shulton, Inc., Clifton, N. J., was announced recently. Mr. Bangs, who had served as house counsel since joining the firm in 1959, was formerly assistant secretary and a member of the legal staff of W. R. Grace & Co.

—★—

Greeff Elects Directors

Two new directors were elected to the board of R. W. Greeff & Co., New York, at its June meeting. The new directors are J. I. Vandewater, sales manager of industrial chemicals and E. G. Knobloch, sales manager of the firm's pharmaceutical department.

Brna Joins Lueders

Paul W. Brna has been appointed Chicago sales representative for George Lueders & Co., New York, it was announced recently.

Paul Brna

Formerly associated with Rhodia, Inc., New York, Mr. Brna is headquartered at 510 Dearborn St., Chicago. He succeeds William F. Kammerer, who died May 2.

—★—

Builds Silicate Plant

Chemical Products Corp., Cartersville, Ga., has begun construction of a plant for the manufacture of a line of sodium silicates, adjacent to its barium chemicals facility at Cartersville. Completion of the plant is expected by mid-October, 1961. Initial production will include commonly used solution grades and sodium metasilicate pentahydrate.

Sodium metasilicate pentahydrate serves as a builder in moderately alkaline cleaning compounds. The metasilicate builder controls pH in the maintenance of moderate alkalinity, imparts wettability, emulsification and general detergent properties, the company states. The solution grades to be produced can be incorporated as an alkaline builder in formulations for heavy duty soaps and synthetic detergents. In detergent formulation, the solution grades perform a function similar to the metasilicate in alkaline cleaning compound formulations.

Give your polish a clear advantage with a MORTON RWL acrylic emulsion

Produce a lighter-colored polish that lays down a near water-clear film. Use a Morton RWL acrylic emulsion in your formula. RWL acrylics have far greater clarity than others available—as proven by both laboratory and user tests. They're especially made for today's white tile floors where a long-lasting, non-yellowing, transparent finish is a top requirement. In addition, RWL acrylics offer outstanding gloss, water and slip resistance.

You'll find Morton RWL acrylics ideally suited for acrylic-based polishes, tile sealers, and combination acrylic-polystyrene polishes. Your Morton Man has full technical information—including field-tested formulations.

Morton also supplies a full line of industry-proven polystyrene latices. Phone or write today for a test sample and full details.

MORTON RWL ACRYLICS include—

RWL 200
—for household polishes

RWL 201
—for hard-film industrial polishes and tile sealers

RWL 202
—for standard industrial polishes

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Chicago 6, Illinois
Financial 6-6760

NEW YORK
17 Battery Place
New York 4, N. Y.
WHitehall 4-4285

NEW ORLEANS
P. O. Box 1464
New Orleans 5, La.
Tel. 524-6511

SAN FRANCISCO
Braun-Knecht-Heimann Co.
1400 Sixteenth Street
San Francisco 19, Calif.
HEmlock 1-8800

LOS ANGELES
Braun Chemical Co.
1363 South Bonnie Beach Pl.
Los Angeles 54, Calif.
ANgelus 9-9311

Bick Fidelity President

Maurice Bick, formerly general manager of the company, has been elected president of Fidelity

Maurice Bick

Chemical Products Corp., Newark, N. J., it was announced recently.

Mr. Bick, who started with the chemical specialties firm 13 years ago as a chemical engineer, will direct its recently launched expansion and acquisition program.

★

Western Pet. Revamps

Western Petrochemicals Corp., recently announced the move of its executive offices to 1020 East 63 St., Kansas City 10, Mo. The company continues to maintain regional sales offices in New York, Chicago and Los Angeles (Pomona), as well as 36 U. S. stock, sales and service centers, and 10 international distribution points. The central sales office will move to Kansas City on October 1, and the central research, development and technical service department will be located there as of Jan. 1, 1962.

It was also announced that: C. W. Nofsinger has been elected vice-chairman of the board of directors; W. J. Price has been elected corporate vice-president in charge of production; George Petrie has been elected corporate vice-president in charge of sales; Dr. John J. Fish, has been appointed director of market development; Carl Spangler has been appointed director of refining at Chanute, Kan.; James C. Fowler has been elected assistant treasurer; Thomas K. Carini, regional sales manager in the east, has taken on the additional responsibility of export sales manager and Charles F. Rand, Jr., regional sales manager in the midwest, has been assigned the additional duties of assistant to the president.

Because of the market outlook for both waxes and polymers, the current programming calls for enlarged facilities at the Chanute refinery. The manufacturing facilities of the Polymer Division will be located at the refinery, as part of its two million dollar expansion and diversification program.

Warwick Wax research and development department and the research and development department of the Polymer Division have been merged; and the two divisional sales departments into a single corporate sales department, effective October 1.

★

Varley Expands Facilities

James Varley & Sons, Inc., St. Louis, have completed a new building to be used for the compounding of disinfectants and cleaners. Additional kettles will increase production by 18,000 gallons per day, it was reported.

The larger production facilities for the newer and more popular type of scented disinfectants and concentrated liquid detergents, mark the third expansion of the company in the past three years.

P & G's Votaw Honored

Verling M. Votaw, director of professional services, toilet goods division, Procter & Gamble Co., Cincinnati, recently received the Distinguished Alumni Service Award, from Indiana University.

A past president of the Alumni Association of the University, Mr. Votaw was cited in the award as a "successful scientist and industrialist and developer of important contributions to the health and welfare of our people."

Mr. Votaw was graduated from Indiana in 1926 and has been associated with P & G since.

★

IFF British Plant

International Flavors & Fragrances, Inc., New York, recently announced the construction of a new plant and company headquarters for its British subsidiary, International Flavors & Fragrances, Ltd., Enfield, England. Scheduled for completion by mid-1962, the facility will include a building for administration and sales as well as separate flavor and perfumery production units each with its own research and development laboratory.

In addition to the Enfield operation, IFF has an aromatic chemical plant at Haverhill, England, which processes natural materials as well as synthetic chemicals for both flavors and fragrances.

IFF executives inspect new site for plant at Enfield, England following ground breaking ceremonies. Shown here are C. P. Walker, president, second from left, and A. L. van Ameringen, chairman, third from left, with other company officials.

HIS Shaving cream that lathers just right, wilts whiskers—yet leaves his face silken-soft — because it contains non-irritating ethanolamides as dispersing agents. Etha-olamides, too, add qualities he likes in cream shampoos. ınd ethanolamine emulsifiers keep the polish for his shoes nd car smooth and uniform until the container's empty. le demands these qualities in all the products he buys.

HERS Shampoos with perfect lather bubble size, opacity, body and hair conditioning effect—because of gentle ethanolamides. Etha-nolamides, too, keep her cosmetics smooth, stable, safe. As suds boosters, they add muscle to household detergents and soaps. And ethanolamines keep polishes for floors, furniture and home appliances smoothly blended for lasting lustre.

YOURS Allied Chemical's ethanolamines to prepare your high-quality products for HIM and HER . . . and INDUSTRY — in institutional cleaners, textile softening agents, wool scouring compounds, cotton washing formulations. ıllied Chemical's mono-, di-, and triethanolamines are manufactured by n improved process assuring high quality and purity. Write or phone for pecifications or technical assistance in formulating your ethanolamides.

Allied Chemical

NITROGEN DIVISION
Dept. EA11-27-3, 40 Rector St., New York 6, N. Y.

319

Geigy Appoints Davis

Appointment of Dr. Arthur Davis as sales manager of Geigy Industrial Chemicals, division of

Arthur Davis

Geigy Chemical Corp., Ardsley, N. Y., was announced last month.

Dr. Davis was most recently associated with the Sun Chemical Co., New York.

—★—

Joins Philadelphia C of C

Fels & Co., has become a member of the Chamber of Commerce of Greater Philadelphia, it was announced recently. The firm, founded in Baltimore in 1866, maintains branch offices in Chicago, Cincinnati and San Francisco, and has 400 employees.

—★—

C-P Names Vitale

The appointment of Peter T. Vitale as manager of product development for household and industrial chemicals in the research and development department of Colgate-Palmolive Co., New York, was announced recently. Prior to the recent realignment of the company's research and development departments, Mr. Vitale served as manager of research on cleansers, industrial and specialty products, in the household products division's research department.

Reporting to Mr. Vitale at the C-P research laboratories in Jersey City, N. J., will be Dr. William Wellman, section head for aerosols and toilet soaps; William Chirash, section head for surface cleaners and finishes; and Dr. Edward J. Kenney, section head for associated products.

—★—

P & G Top TV Advertiser

Procter & Gamble Co., Cincinnati, was the top television advertiser for 1960 with a total expenditure of $101,491,119. It was the first time in history that the $100,000,000 mark had been surpassed. These figures are from a report just issued by the Television Bureau of Advertising, New York. The firm spent $55,084,440 for spot advertising and $46,406,679 for network shows, according to the report.

Second largest TV advertising spender in 1960 was Lever Brothers Co., New York, with a total of $45,148,700. American Home Products Corp., New York, with $42,788,167, was the third largest buyer. Colgate-Palmolive Co., New York, was in fifth place, with $33,930,510.

—★—

Morton Names Kron

Richard B. Kron was recently appointed eastern regional sales manager for Morton Chemical Co., Chicago. He will supervise the Morton Chemical sales force in 14 eastern states.

Mr. Kron, who joined Morton in December 1960, had been midwest district manager of the Chemical Division of General Mills, Inc., Minneapolis, Minn.

Richard B. Kron

GAF Names Cloney

James M. Cloney has been appointed general manager of the Ozalid Division of General Aniline

James M. Cloney

& Film Corp., New York, effective July 1, it was announced recently.

Mr. Cloney, who has been director of marketing of Antara Chemicals Division, has held various executive positions in sales and marketing of chemicals for the division. He became associated with Antara in 1946. In 1957 he was named sales manager of Antara Chemicals and in 1960 was appointed director of marketing for the division. Prior to 1957 he served as manager of the organic chemicals department, manager of special products sales, market manager, and regional manager on the west coast.

Harold W. Metcalf, who has been serving as acting general manager of Ozalid, will assist Mr. Cloney in his new post.

—★—

New Wyandotte Plant

Wyandotte Chemicals Corp., Wyandotte, Mich., last month announced plans to construct a $3,500,000 propylene oxide plant, in that city. Construction is scheduled to begin in the fall. Propylene oxide is an important raw material used in the manufacture of chemicals for detergents.

It was also announced that the firm has purchased 24 acres of industrial property at Ontario, Cal., as part of its long-range development program.

FTC Complaint Dismissed

A Federal Trade Commission hearing examiner has ruled that the "sandpaper-shaving" television commercials for "Rapid Shave" aerosol shave cream, produced by Colgate-Palmolive Co., New York, are not deceptive but merely "harmless exaggeration or puffing." Accordingly, the examiner issued an order which would dismiss the FTC's complaint of Jan. 8, 1960, against the company. This is not a final decision of the Commission and may be appealed, stayed or docketed for review.

The examiner stated, "essentially what is presented in the advertising would appear to be little or nothing more than a case of harmless exaggeration or puffing. Obviously the sand paper sequences were employed simply for the purpose of emphasizing and dramatizing the recognized moistening or wetting properties of the cream. It is difficult to believe that anyone could have been misled as to the properties or qualities of the product."

Oscar Lubow

Lever Appoints Lubow

Appointment of Oscar Lubow to the newly-created position of director of promotion services, Lever Brothers Co., New York, was announced in mid-June. Mr. Lubow directs corporate staff work in promotion planning, preparation and analysis. He was formerly vice-president and account supervisor at Young & Rubicam, Inc., New York advertising agency.

—★—

Hubbard Needham Dies

Hubbard Smith Needham Jr., 41, manager of the southern division for the bulk soap department of Procter & Gamble Co., Cincinnati, died recently in Jacksonville, Fla. Mr. Needham, whose headquarters and home were in Atlanta, Ga., suffered a relapse of hepatitis, a former ailment.

Ingestion Hazards

(*From Page* 52)

parent toxicity. What is apparently not generally known is that denying the animals access to water from two to four hours before and after dosing can result in larger differences in the apparent toxicity of some products. This is a very recent observation in our toxicological laboratories; the effect is under further study, but no results

are available for reporting now.

(To be concluded)

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Aluminum Aerosols

(From Page 87)

lubricant or degreasing solution. Such an initiator probably did not exist on the surface of the coupons.

The isopropanol-propellant 12 series presents a much less erratic picture than does the ethanol series. Water contents in the nominal range of 0 to 0.2% (by measurement 750 - 2000 ppm) caused no corrosion of can or valve cups within the storage period. The 1.0% and 10.0% water contents caused some definite pitting after one month's hot storage, but the rate of pit growth was such that no increase in depth of pit occurred during five additional months of hot storage. The safe upper limit for total water content in this formulation is estimated at 0.4%.

Odorless mineral spirits with the halogenated hydrocarbon propellants have no tendency to corrode bare aluminum. The addition of 1000 ppm (0.1%) water caused some localized light etching of the surface. This represents some small dissolution of aluminum into the product but does not create a condition which will cause can failure. No attack was noted on the room temperature stored samples with either water content.

The final group of chemicals studied were the active ingredients.

The anionic and cationic surface active agents pressurized with propellant 12—see Figure 7—tend to produce a general chemical attack of the aluminum and some product contamination. The corrosion product was adherent

discovered: a key to hidden treasures of fragrance!

*nerone**

(brand of menthenyl ketone)

NERONE, *a new Givaudan synthetic aromatic chemical, makes available to the perfumer for the first time the fresh, natural odor effect of the exotic ketone portion of the essential oils.*

NERONE *is a pure concentrated note, free from the terpene and ester components that would hamper its adaptability, and is extremely stable without any discoloring effects. It enables the perfumer to achieve new and unusual soap and detergent fragrances that are also stronger, more stable and lasting — with increasing independence from essential oils!*

NERONE *offers fascinating possibilities for the creation of distinctive perfumes for cosmetics and toiletries, and also proves valuable as a fortifier for such essential oils as petitgrain, bergamot, lavender, neroli, vetiver, geranium, lemon. May we send you samples and full information on this new Givaudan development?*

*Trade-mark—Patent Pending

GIVAUDAN

GIVAUDAN-DELAWANNA, INC.
321 West 44th Street
New York 36, N. Y.

and was of the type which could greatly retard further attack. There was no indication of imminent failure on the cans stored at 100°F. for six months. It is conceivable that this type and degree of corrosion may be tolerable with certain product packs.

Of probably important interest is the fact that the lacquered aluminum valve cups suffered no corrosion. The lacquered tinplate cups were severely corroded.

The nonionic surface active agent with propellant 12 caused only superficial light staining which attained the maximum severity after hot storage for three months. Aluminum is a satisfactory container for this combination of chemicals. Aluminum valve cups are preferred to tinplate.

The hair lacquer fixatives, PVP, PVP/VA and shellac in ethanol showed no tendency to induce corrosion of aluminum. This test, however, is inconclusive on a practical basis because no propellant was included. However, previous unpublished work by the authors on hair lacquer formulations in lacquered aluminum cans indicated that the shellac fixative in ethanol is a satisfactory pack with the propellant 11/12 combination or a 12/114 combination or with 12 alone. PVP and PVP/VA fixatives are satisfactorily packed only with the 12/114 propellant combination or straight 12. There would appear, therefore, to be either an unfavorable relationship induced by the combining of propellant 11 with the PVP and PVP/VA formulations or an inhibiting effect by the shellac. No work has been done to explore these possibilities.

Wherever it is proposed to combine ethanol with halogenated hydrocarbon propellants, thorough testing is required. Our best advice at the present time would be to use a lacquered container.

Cetyl alcohol, *per se*, caused no corrosion of the containers. Again, this test neglects the probable effect of the combination with a propellant.

Propylene glycol and triethylene glycol in isopropanol are inert to bare aluminum. As noted previously, commercially anhydrous isopropanol can be combined with propellant 12. This indicates that these three chemicals—glycol, isopropanol, and propellant 12—may be combined as a basis of an air freshener and packed in bare aluminum cans. Our work has not proven this, but it is submitted as a possible subject for study which an interested packer may wish to undertake.

Of the following insecticides dissolved in odorless mineral spirits: pyrethrum, piperonyl butoxide, perthane, strobane and thanite, all with at least 200 ppm water, only strobane produced a mildly corrosive solution. The solution of DDT and methoxychlor "90" in methylene chloride are inert with respect to aluminum.

Both O.M.S. and methylene chloride were shown in other tests to be non corrosive when combined with the propellant 11/12 mixture if commercially anhydrous conditions were established. It is reasonable, therefore, to presume that insecticide additions (with the possible exception of strobane) to these combinations of solvents and propellants may make a basic insecticide formulation which is compatible with bare aluminum. This presumption was borne out by prior work by the authors. Nonetheless, we recommend that each formulation be shelf tested prior to marketing.

From this rather modest investigation it is possible to draw a few inferences. Polar solvents appear to be corrosive to bare aluminum but in many cases this tendency can be effectively controlled by water or other reaction inhibitors. Non-polar solvents appear to be relatively safe as are the majority of non-metallic active ingredients.

It is our hope that this study has sparked the imagination of others and that they, in turn, will present their findings at other CSMA meetings, as it is only through efforts of this nature that aerosols will continue their phenomenal growth.

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European Polishes

(*From Page* 93)

While both types of formulations are buffable and especially recommended for industrial use, the American suggestion has a higher percentage of a combination of plastic dispersion and leveling resin. This reflects the manufacturers' desire for a harder film.

Anionic Dry-Bright Emulsions

European Type—Formula No. 538

A

parts	
15.0	"Hoechst Wax KSS"
1.2	Oleic acid
1.2- 1.3	AMP
82.6-82.5	Water
100.0	Basic emulsion

B

parts	
70.0	Basic emulsion
23.0	"Ubatol 2007" (15%)
7.0	"Ubatol 3050" (15%)
11.0	of a 15% leveling agent
111.0	Final emulsion

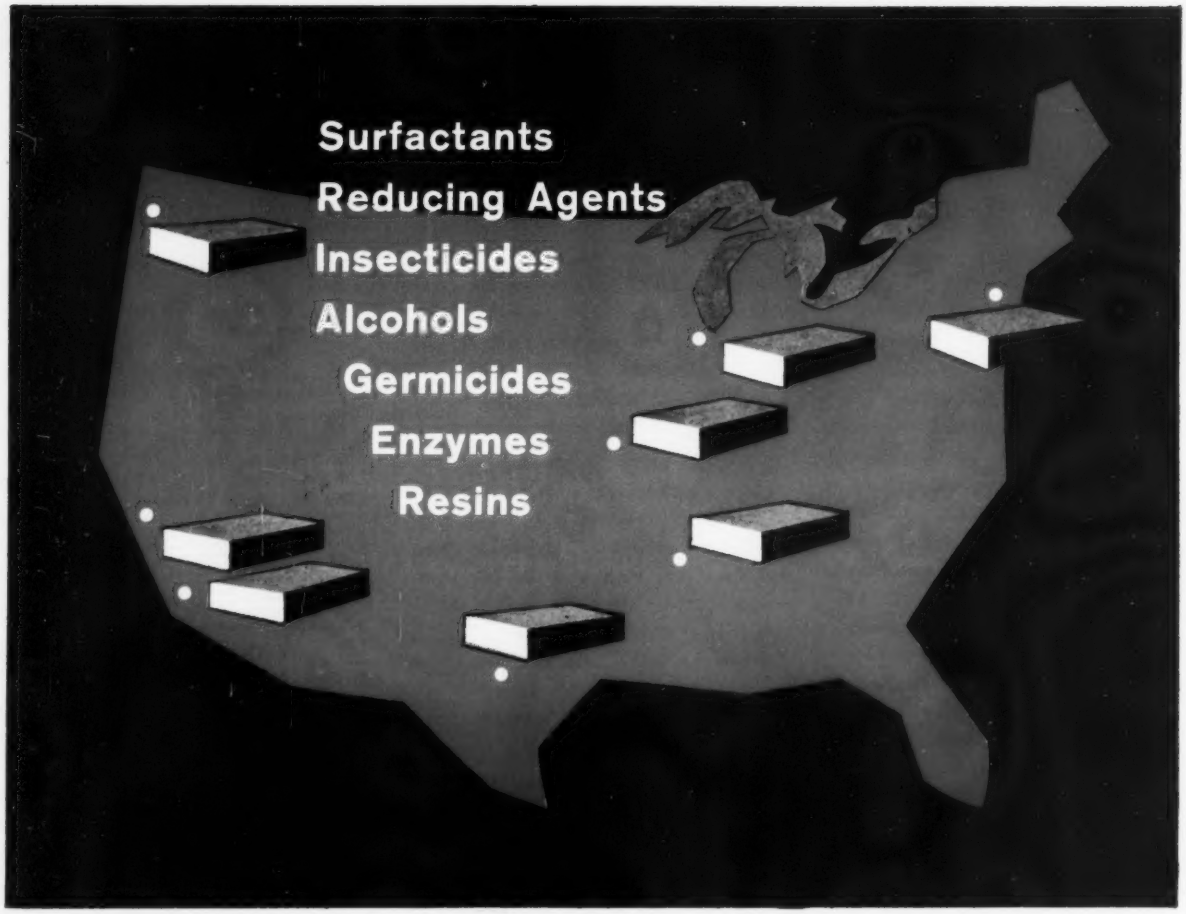
American Type—Formula No. 540

A

parts	
8.0	"Hoechst Wax VP-115"
4.0	Emulsifiable polyethylene wax
1.8	Oleic acid
2.5	Morpholine
83.7	Water
100.0	Basic emlsion

B

70.0	Basic emulsion (13-14%)
30.0	Acrylic dispersion + KP 140 (13-14%)



Right place for the product—Near You

Rohm & Haas' network of warehouses and technical service centers assures you of a dependable source of sanitary chemicals and formulating assistance. A steady flow of products from four manufacturing plants to eight strategically located warehouses places stock-service within quick-delivery distance of your plant. Backing one of the most complete sanitary chemical lines available today is the Rohm & Haas staff of field specialists, located across the country. Their close working relationship with Rohm & Haas research keeps them constantly aware of the newest developments in the industry. Contact the Rohm & Haas sanitary chemical specialist nearest you. He'll see that you get the kind of service you want, when you want it. Our products and technical information may be the keys to better formulations and lower costs for you.

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Executive Offices: Philadelphia, Pa., WAlnut 5-9860 • Branch Offices: Los Angeles, California, WEbster 1-1491 Oakland, California, TEmplebar 4-6300 • Fort Lauderdale, Florida, JAckson 3-3146 • Chicago, Illinois, ROdney 3-7000 Kansas City, Missouri, LOgan 1-6821 • New York City, LOngacre 3-4154 • LeRoy, New York, LeRoy 976 • Memphis, Tennessee, JAckson 5-3757 • Pasadena, Texas, GReenwood 9-2861 • Yakima, Washington, GLencourt 3-1220

SANITARY CHEMICALS

20.0	Leveling resin (13-14%)
120.0	Final emulsion

Shoe Cream (Emulsion)

European Type—Formula No. 575

parts	
7.5	"Hoechst Wax S"
6.0	"Hoechst Wax BJ," unbleached
1.0	Technical sodium stearate
0.4	Triethanolamine
49.1	Water
36.0	Turpentine
100.0	

American Type—Formula No. 141

parts	
7.0	"Hoechst Wax LP"
4.0	"Hoechst Wax E"
5.0	Paraffin (130/134°F) M.P.
1.5	Stearic acid
0.3	Triethanolamine
0.7	Morpholine
15.0	Mineral spirits
66.5	Water
100.0	

The American shoe cream is formulated with mineral spirits rather than turpentine and undoubtedly a little harder in consistency than the European cream.

Semi-Solid Floor Polish in Transparent Tubes

European Types—Formula No. 113

parts	
4.0	"Hoechst Wax FL"
3.0	"Hoechst Wax O"
1.0	Polyethylene wax (AC 6)
2.0	"Victory" amber wax (155/Bareco)
20.0	Paraffin wax 60/62°C (140/144°F)
70.0	Mineral spirits
100.0	

Formula No. 114

parts	
3.0	"Hoechst Wax FL"
2.5	"Hoechst Wax O"
0.5	"Hoechst Wax F"
2.0	"Victory" amber wax (155/Bareco)
22.0	Paraffin wax 56/58°C (133/136°F)
70.0	Mineral spirits
100.0	

Formulations of this type are in actual production in Europe. As yet this is strictly a European development with no comparable product noted in the U. S. This type of polish comes packaged in various types of PVA containers.

Shoe Polish—Solvent Paste

European Type (with surface mirror)—Formula No. 24

parts	
1.5	"Hoechst Wax OP"
8.5	"Hoechst Wax OM"
0.5	"Hoechst Wax F"
0.5	Plastic microcrystalline wax about 70°C (158°F) S.P.
17.0	Paraffin wax 52/54°C (125/130°F)
36.0	Turpentine
36.0	Mineral spirits
100.0	

American Types—Formula No. 306

parts	
4.0	"Hoechst Wax OP"
2.0	"Hoechst Wax E"
2.0	Polyethylene wax (#6 or "Epolene N")
12.0	Paraffin wax M.P. 150°F ("Essowax 5010")
80.0	Mineral spirits
100.0	

Formula No. 307

parts	
3.5	"Hoechst Wax O"
2.5	Carnauba wax (NC #3)
2.0	Polyethylene wax (#6 or "Epolene N")
12.5	Paraffin wax M.P. 150°F ("Essowax 5010")
79.5	Mineral spirits
100.0	

The American shoe polish manufacturer prefers a lower priced and harder paste than is usual in Europe. In most cases, he omits the use of turpentine and is not too concerned about surface mirror gloss. Heat stability and dimensional stability are more critical in the U. S. than in Europe.

Anionic Dry-Bright Emulsions (high wax type)

European Type—Formula No. 529

A

parts	
15.0	"Hoechst Wax KSS"
1.3	Oleic acid
1.8	Morpholine
81.9	Distilled water
100.0	Basic emulsion

B

8.0	15% leveling resin cut
108.0	Final emulsion

American Type—Formula No. 542 LP

A

parts	
3.50	"Hoechst Wax VP-115"
2.50	"Hoechst Wax LP"
6.00	Emulsifiable polyethylene wax
2.00	Hard microcrystalline wax (M.P. 190°F min.)
0.75	Oleic acid
2.90	Morpholine
82.35	Water
100.00	Basic emulsion

B

15.00	15% leveling resin cut
115.00	Final emulsion

Floor tile surfaces in Europe seem to require a much lower percentage of resin for satisfactory leveling, possibly, because we do not go overboard in the use of silicone oils as lubricants or parting agents. Presence of "LP" wax in the American type polish lowers oleic acid requirements and aids formation of a very hard film.

Car Polish (Emulsion)

European Type—Formula No. 680

parts	
4.5	"Hoechst Wax S"
1.0	"Hoechst Wax BJ" unbleached
0.7	Triethanolamine
0.5	Wax emulsifier 2106
0.7	Nonionic detergent
63.0	Water
2.0- 4.0	Silicone oil 350 cts
25.6-23.6	Mineral spirits
2.0	Finest silicic acid
100.0	

American Type—Formula No. 685/3

parts	
4.0	"Hoechst Wax LP"
3.0	"Crown 36"
0.4	Triethanolamine
59.6	Water
3.0	Silicone oil 350 cts
15.0	Mineral spirits, 120/200°C boiling range
15.0	Abrasives
100.0	

Greater extremes of temperature and soiling to which American cars are exposed call for a higher abrasive content in auto polishes. Formula 685/3, makes an excellent stable aerosol foam product when packaged as a 90% concentrate and 10% propellant (12/114) (40:60) blends.■

New Fly Repellent Booklet

Control of flies, including the face fly is described in a new 35-page formulator's booklet now available from Crag Agricultural Chemicals, Union Carbide Chemicals Co., Union Carbide Corp., New York. The booklet gives information on "Crag" fly repellent, includes physical properties, solubilities of numerous toxicants and approximate costs of ingredients used for manufacturing various formulations. Copies may be obtained from Crag Agricultural Chemicals, 270 Park Ave., New York 17.

—★—

Super Soap to Build

Super Soap Co., San Francisco, manufacturers of industrial hand cleaners, are building a new plant at 1421 Egbert Ave., that city.

—★—

Schenectady Shifts Three

Philip H. Groggins, Jr., has been named sales manager in charge of resins, and George Brannick has been named to the newly created position of manager, technical service—resins, it was announced recently by Schenectady (N.Y.) Varnish Co. John S. Horn has been appointed to succeed Mr. Groggins in the Chicago area.

Mr. Groggins, with the company since 1951, was formerly a technical sales representative in the Chicago area and sales development supervisor in the company's home office. Mr. Brannick, who joined the company in 1960 as a research development chemist, was formerly associated with Varcum Chemicals, Division of Reichhold Chemicals, Inc., White Plains, N.Y.

—★—

Carter Products Reports

Carter Products, Inc., New York, recently reported sales and net earnings for the fiscal year ending March 31, 1961 were $56,781,209, and $7,474,803, respectively, equivalent to $2.88 per share. For the corresponding period a year ago, sales were $58,899,638 and net earnings $8,941,489, equivalent to $3.44 per share.

—★—

DuBois Names Three

Three new appointments were announced recently by DuBois Chemicals, Inc., Cincinnati. Leonard Westenberg has been named manager of the equipment division; Robert Nieporte, assistant plant manager; and Roger Arnold, head of the control laboratory.

—★—

O'Malley to Hazelton

William J. O'Malley has joined the research staff as a pharmaceutical chemist in the biochemistry-microbiology department of Hazelton Laboratories, Inc., Falls Church, Va., it was announced last month. Dr. O'Malley was formerly an assistant professor of pharmacy at the Medical College of Virginia.

Philip H. Groggins, Jr.

George Brannick, Jr.

Mona Names Slipiec

Roy Slipiec was recently appointed mid-west district manager for Mona Industries, Inc., Paterson, N.J. He is in charge of marketing Mona products and extending technical service on surface active agents and chelating agents.

Roy Slipiec

Mr. Slipiec was formerly vice-president in charge of sales for Ralph Kaye & Associates, Chicago. Prior to that he was Chicago representative for Geigy Industrial Chemicals, Inc., Ardsley, N.Y., serving in a technical sales capacity.

—★—

New Lien Catalog

A new 9 x 11 inch, 118-page catalog of sanitation supplies and equipment for commercial and industrial needs has just been issued by Lien Chemical Co., Franklin Park, Ill.

Described in the catalog is a wide selection of materials for floor maintenance, including cleaners, waxes and floor conditioning machines, with many pages devoted to janitorial supplies, as well as chemicals and equipment for pest control.

—★—

Hercules Names George

Richard Stanley George was recently named director of sales, organic chemistry, for the synthetics department of Hercules Powder Co., Wilmington, Del. Dr. George had been manager of the oxychemicals division, Naval Stores Department, since 1955.

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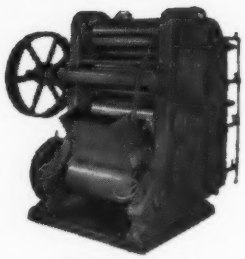

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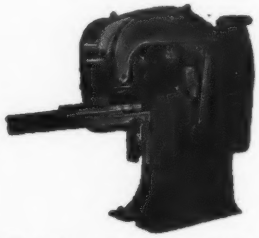

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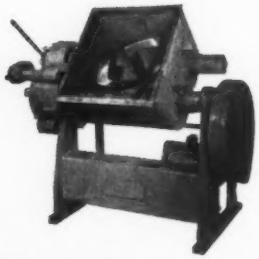
1 — ABC Top and Bottom Case Sealer.



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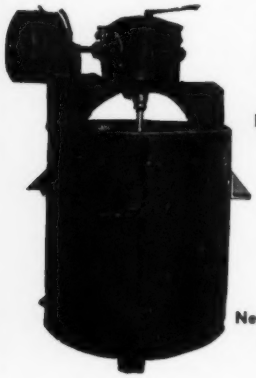

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Chemist Wanted: With heavy experience in glycerine, fatty acids and soaps. Able to take charge of laboratory. Position also offers opportunity to apply theory to plant operation. Remuneration open to proper party. Address Box 629, c/o *Soap*.

Production Supt.: Chemical Engineer, production and packaging of spray dried detergents. Must be capable of complete management of medium size plant, three shift operation. Responsible for scheduling raw materials, and production, shipments, quality control, personnel, cost reduction, product improvement, maintenance and purchase of equipment. Address Box 623, c/o *Soap*.

Soapmaker Wanted: By plant located in large Western Canadian city. Must be experienced in manufacture of toilet and laundry soaps, and be able to supervise entire plant operation. Position permanent. Excellent opportunity for right man to advance with growing company. Replies confidential. State age, experience and references. Address Box 628, c/o *Soap*.

General Production Mgr.: Excellent opportunity in fast growing aerosol chemical packaging company. Desire person with experience in "high volume" manufacturing. Prefer bottling, canning or other conveyorized experience. Will have complete charge of manufacturing operations. Send full resume to Puritan Aerosol Corporation, 160 N. Washington St., Boston 14, Mass. All replies held in strictest confidence.

(*Continued on Page* 173)

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Office/Sales Mgr.: 28, seeks position with manufacturer of cosmetics or toiletries in N. Y. area. Has drive, initiative, imagination. Highly experienced in customer relations, order processing, correspondence, contact with salesmen; thoroughly familiar with traffic and production expediting. Fluent German, Italian, some French. Address Box 630, c/o *Soap*.

Chemist: Extensive background in chemical specialties. Research, development and production in household, industrial, institutional and automotive fields. Formulations of waxes, cleaners, emulsions, polishes, degreasers, disinfectants. Strong experience in aerosols and hair preparations. Proven creative ability. Technical sales service. Fluent Spanish. Seeking responsible position. Address Box 631, c/o *Soap*.

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Sales Representative: Interested in representing or distributorship with reputable sanitary supply and chemical company, in Arizona and surrounding southwest area. 15 years sales in allied fields. Furnish complete resume and references. Address Box 632, c/o *Soap*.

Chemist: Product development chemist with 8 years diversified experience in specialties, waxes, detergents and disinfectants. Prefer metropolitan New York area. Address Box 633, c/o *Soap*.

Industrial Sales: Top salesman, experienced sales executive, know sanitary supply field, industrial, institutional buyers. Availability result of merger. Best references. Address Box 618, c/o *Soap*.

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For Sale: 3 and 4 roll granite steel roller mills. Plodders. Grinders. Chippers. Crutchers. Slabbers. Cutting tables. Kettles. Filter presses. Mixers. Sifters. Foot and power soap presses. Partial listing. We buy surplus equipment. Stein Equipment Co., 107 – 8th St., Bklyn. 15, N. Y.

(*Continued on Page* 174)

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For Sale: Buflovak 42" x 120" dbl. drum dryers, Sharples #16V inconel soap centrifugals, Hope single piston stainless filler. Perry Equipment Corp., 1410 N. 6th St., Phila., 22, Pa.

For Sale: By I. E. Newman, 818 W. Superior, Chicago, Ill., CH-3-1425. Mixers. Marion-Munson, sizes 50# to 10,000#; Crutchers—1,000-8,000#; Wrapper Type S; Auto Cutting Table; Bucket Elevators, Mills, Cutters, Crushers, Soap Equipment. Prices on request.

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Back Copies Available: Retiring from soap business and have practically all copies of *Soap* since 1940. If interested communicate with Mr. T. L. Marks, Zoned Soap Co., 2423 Leroy Ave., Ft. Wayne, Indiana.

For Sale: Dryers — Proctor & Schwartz. 1 two roll three section. 1 five roll two section Fitzpatrick Bros. Inc., 1300 W. 32nd Pl., Chicago 8, Ill.

New Armour Lab

(*From Page* 56)

blends including caprylic, capric, lauric, myristic, palmitic and stearic. It also produces blends of unsaturated acids such as oleic and linoleic. Main starting materials are tallow and coconut, cottonseed and soybean oils, of which the plant consumes a hundred million pounds a year.

Naturally occurring glyceride mixtures generally contain at least five different fatty acids. To obtain products industrially more useful the glycerol must be split from the fatty acids and then the acids separated.

To accomplish this the fats are put through a continuous splitting tower where water at high temperature and under pressure splits the fat into glycerine and fatty acids. The glycerine water layer is drained off and the mixture of fatty acids is ready for further processing. Fractional distillation separates acids of various chain lengths, by taking advantage of their different boiling points. Saturated fatty acids are separated from the unsaturated by solvent crystallization, which involves chilling a solution of fatty acids and removal of the precipitated saturated acids.

Soaps, detergents, waxes, insecticides, shampoos and other toiletries are just a few of the products incorporating fatty acids.

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Applications will be treated confidentially.

ty acids yields fatty nitrogen derivatives. First step in the process is to react fatty acids with ammonia to form a different type chemical known as a nitrile. Treatment of nitriles with hydrogen results in formation of fatty amines, which are organic alkalies.

The amines act as starting materials for many other nitrogen containing compounds, such as quaternary ammonium chlorides, amine salts, secondary and tertiary amines, ethoxylated amines and polyamines.

Purpose of the new laboratory and ancillary facilities is the development of new fat derived products, improvement of current processing methods, finding of new applications for Armour's products, and technical service to customers.

The plant at McCook went on stream in 1949 and was operated by the then newly established chemical division of Armour and Co. The name of the division was changed to Armour Industrial Chemical Co. in 1959. The division's offices are located at 110 N. Wacker Drive, Chicago. M. E. Lewis is general manager of the division and vice-president of Armour and Co.

—★—

Yarbrough Joins Conco

David W. Yarbrough has been elected to the board of Conco Chemical Co., Dallas, Tex., sanitary supply distributing firm, it was announced recently.

—★—

Clintwood Names Sales Rep.

Clintwood Chemical Co., Chicago, appointed Stanton Sales Co. of Oradell, N. J., as representatives for its line of "Sandrol" surface active agents, it was announced in June. Stanton will handle "Sandrol" alkanolamides and glycol esters in the Metropolitan New York, northern New Jersey, and Philadelphia areas. The products are used in detergents, cosmetics, metal cleaning and textile chemical specialties.

Dema Inquiry Kit

Availability of an information kit for dealers handling automatic liquid detergent dispenser devices of Dema Engineering Co., St. Louis, was announced recently by Richard J. Kautzman, sales manager. The kit or "literature pack" is sent with names of Dema dealers to firms answering couponed advertising for liquid dishwashing machine detergent feeders and controls. When an inquiry is received by Dema, the firm sends out the kit and notifies dealers in the area from which the inquiry has been received.

A covering letter, answering the inquiry, illustrated individual product sheets, and a folder dealing with applications and uses for the Dema liquid proportioner, are contained in the kit. Covered are Model 224 rinse injector, Model DC 100 detergent control, Model 184 proportioner, Model 189 dual proportioner, and Models 217 and 219 liquid detergent feeder.

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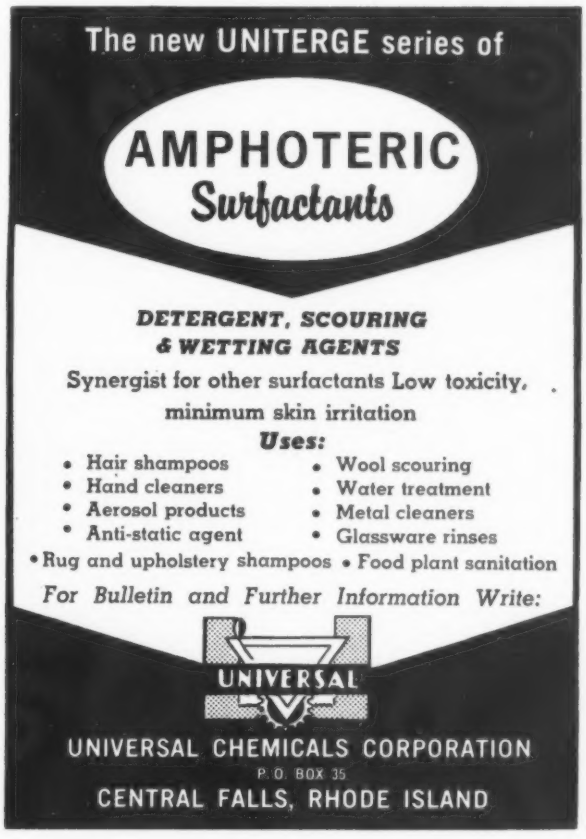

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Redshaw U B S President

Appointment of Lincoln L. Redshaw as president of U B S Chemical Co., Cambridge, Mass., a

Lincoln L. Redshaw

division of the A. E. Staley Manufacturing Co., Decatur, Ill., was announced recently. Mr. Redshaw succeeds Paul W. Atwood, who retired May 5th, after eight years as head of UBS. Mr. Atwood will continue his association with UBS and Staley as a consultant.

Mr. Redshaw, with UBS for 24 years, started with the Union Bay State Co., in 1937. He served in various management posts, including technical, production and purchasing functions. Elected vice-president in 1946, he became manager of sales to the shoe industry in 1954, and has headed manufacturing and personnel since 1955.

—★—

General Mills Names Two

Two appointments in the sales staff of General Mills' Chemical Division, Kankakee, Ill., were announced recently. Robert O. Ness, who joined the division seven years ago, has been named senior sales representative for General Mills chemicals, assigned to to St. Louis branch. Kurt Hellberg, who joined the division a year ago as a technical trainee, has been assigned to the company's Chicago district sales office.

—★—

ADM Appoints Sklarz

Appointment of Everett Sklarz as eastern regional sales manager for the chemical group of Archer-Daniels-Midland Co., Minneapolis, Minn., was announced recently.

Mr. Sklarz is in charge of all administrative and sales matters for all ADM chemical group products in the area covered by the company's New York regional office.

—★—

Downes Joins Fales

Daniel D. Downes has joined the sales staff of W. H. Fales Co., Brooklyn, N.Y., it was announced recently. W. H. Fales Co. has been in business for 50 years producing a variety of metallic soaps and chemical specialties. It was also announced that Bruce Perks, plant manager for over 25 years, has been named general manager and purchasing agent.

—★—

Nat. Aniline Names Leary

William P. Leary has been named manager of sales for special chemicals, it was announced recently by Allied Chemical's National Aniline Division, New York. In this newly created position, he is responsible for the sales and promotion of "Nacconol" detergents.

—★—

Grodin Shulton Vice-Pres.

Adam J. Grodin has been elected vice-president in charge of art for Shulton, Inc., Clifton, N. J., it was announced recently. Mr. Grodin, named art director in 1950, had served as executive art director since 1959.

Adam J. Grodin

Oldenburg to New York

Carl J. Oldenburg has been named eastern sales manager, petroleum chemicals, for the Oron-

Carl J. Oldenburg

ite division of California Chemical Co., San Francisco, a subsidiary of Standard Oil Co. of California, it was announced recently.

Mr. Oldenburg, who has been with the company for 17 years, was formerly Oronite's midwestern district sales manager for three years. He will be headquartered in New York City.

—★—

Carbide Names Clayton

Eugene T. Clayton has just been named by Union Carbide Chemicals Co., a division of Union Carbide Corp., New York, as project leader at its Tarrytown, N. Y., technical service laboratory.

In his new assignment, Mr. Clayton is responsible for use research programs in support of the marketing of detergents and detergent raw materials. He will develop and evaluate household products for all types of cleaning and study applications of surfactants in the textile, metal working, agricultural, and other industries.

—★—

Heads Credit Association

M. H. Wallace, Colgate Palmolive, Ltd., Toronto, Ont., has been elected president of the Ontario Division of the Canadian Credit Men's Association, it was announced recently.

index to advertisers

Aerosol Machinery Co. 126
Aerosol Techniques, Inc. 125
Allied Chemical Corporation,
General Chemical Division 128, 129
Nitrogen Division 160
Plastics Division 138
Solvay Process Division ....2nd Cover
Alpine Aromatics, Inc. 174
American Agricultural Chem. Co. 42
Anchor-Hocking Glass Corp. 104, 105
Argueso & Co., M. 98
Arizona Chemical Co. 32
Aromatic Products, Inc. 65
Atlantic Refining Co. 31

Badertscher, A. Edison 169
Bareco Wax Co., Division of
Petrolite Corp. 92
Barr & Co., G. 125
Bombrini Parodi-Delfino 112

Candy & Co. 10
Capitol Packaging Co. 134
Central Can Co. 106
Chase Products Co. 125
Chemical Specialties Mfrs. Assn. 64
Cowles Chemical Co. 30
Cox, Dr. Alvin J. 169
Crown Cork & Seal Co., Inc. 122

Dawe's Laboratories, Inc. 176
Dema Engineering Co. 36
Dodge & Olcott, Inc. 59
Dow Corning Corp. 98
Dreyer, Inc., P. R. 152
Durez Plastics Division 80

Eastman Chemical Products, Inc. 77
Emery Industries, Inc. 34
Enjay Chemical Co., Div. of
Humble Oil & Refining Co. 12
Ertel Engineering Corp. 150

Felton Chemical Co. 25
Firmenich, Inc. 14
Fluid Chemical Co. 108, 125
Food Machinery & Chemical Corp.,
Chemicals & Plastics Div. 88
Chlor-Alkali Division 16
Fairfield Chemical Division 78
Mineral Products Division 29
Fritzsche Brothers, Inc. 19, 20

Gard Industries, Inc. 125
Gillespie-Rogers-Pyatt Co. 84
Givaudan-Delawanna, Inc. 82, 164
Goodrich Chemical Co., The B. F. 60
Gray Co., The 148

Hazelton Laboratories, Inc. 169
Heyden Newport Chemical Corp. 150
Hollingshead Corp., R. M. 125
Hooker Chemical Corp. 8, 61
Hudson Laboratories, Inc. 169

International Flavors &
Fragrances, Inc. 75

Krystall Chemical Co. 18, 162, 163

La Wall & Harrisson, Inc. 169
Leberco Laboratories 169
Lewers, Dr. W. W. 169
Lurgi, G.m.b.H. 145

Maas Chemical Co., A. R. 38
Mantrose Corp., The 154
Marchon Products, Ltd. 11
Mazzoni, S.p.A., G. 142, 143
McCutcheon, Inc., John W. 169
McLaughlin Gormley King Co. 66
Morton Chemical Co. 158

Newman-Green, Inc. 130
Newman Tallow & Soap
Machinery Co. 170
Norda 3, 90

Old Empire, Inc. 126
Olin Mathieson Chemical Corp.,
Blockson Chemicals Division 13
Organics Division 140
Onyx Chemical Corp. 4
Owens-Illinois Glass Co. 110

Pennsalt Chemicals Corp. 102
Peterson Filling & Packaging Corp. 125
Pfizer & Co., Charles 33
PFW 17
Philadelphia Quartz Co. 6
Pilot Chemical Co. of California..15, 156
Polyvinyl Chemicals, Inc. 96
Precision Valve Corp. 116
Price, Dr. Donald 169
Procter & Gamble Co. 40

Ralm Products, Inc. 125
Risdon Mfg. Co. 120
Rohm & Haas Co. 101, 166
Royal Dobbelman, Ltd. 174

Schimmel & Co. 86
Schous Fabriker A/S, C. 150
Schrader's Son, A. 107
Scientific Associates, Inc. 169
Seaquist Mfg. Corp. 135
Shulton, Inc. 9
Sindar Corp. 62
Foster D. Snell, Inc. 169
Spraying Systems Co. 175
Stalfort & Sons, Inc., John C. 125, 132
Stepan Chemical Co. 7
Stillwell & Gladding, Inc. 169
Sun-Lac, Inc. 125, 136

Terriss-Consolidated Industries 148
Testfabrics, Inc. 171
Tombarel Products, Inc. 176
Treplow Chemical Co. 162, 163

Ungerer & Co. .....3rd Cover
Union Carbide Corporation,
Union Carbide Chem. Co. Div. ..26, 114
Union Standard Equipment Co. 173
U. S. Borax & Chemical Corp. 27
U. S. Bottlers Machinery Co. 148
U. S. Hoffman Can Corp. 134
U. S. Industrial Chem. Co. .....4th Cover
Universal Chemicals Corp. 175

Velsicol Chemical Corp. 172

Wallace & Tiernan, Inc.,
Chemical Products Division 176
Harchem Division 179
Wells, F. V. 171
West End Chemical Co. 57, 58
Wisconsin Alumni Research Found... 171
Witco Chemical Co. 28
Wyandotte Chemical Corp. 95, 97, 99

COMING MEETINGS

American Chemical Society, 140th national meeting, Chicago, Sept. 3-8.

American Oil Chemists Society, national meetings, Pick Congress Hotel, Chicago, Oct. 30-Nov. 1, 1961; Roosevelt Hotel, New Orleans, May 7-9, 1962.

Canadian Manufacturers of Chemical Specialties Association, fourth annual meeting and conference, Royal York Hotel, Toronto, Oct. 30-Nov. 1.

Chemical Industries Exposition, Coliseum, New York, Nov. 27-Dec. 1.

Chemical Specialties Manufacturers Association, 48th annual meeting, Roosevelt Hotel, New York, Dec. 4-6, 1961; 48th midyear meeting, Drake Hotel, Chicago, May 14-16, 1962.

Chicago Perfumery & Extract Ass'n, Par-Busters' Golf Outings, Itasca C. C., Itasca, Ill., July 27; Swing Party, Glen Flora C. C., Waukegan, Ill., Aug. 17; Calumet C. C., Homewood, Ill., Sept. 14.

Drug, Chemical and Allied Trades Association, annual meeting, Pocono Manor Inn, Pocono Manor, Pa., Sept. 14-17, 1961.

Eastern Housewares Show, Coliseum, New York, Aug. 7-10.

Entomological Society of America, ninth annual meeting, McAllister Hotel, Miami, Fla., Nov. 27-30.

Federation of European Aerosol Associations, 3rd International Congress, Lucerne, Switzerland, Oct. 3-8.

National Chemical Exposition, Amphitheater, Chicago, Sept. 5-8, 1961.

National Agricultural Chemicals Association, annual meeting, Homestead, Hot Springs, Va., Oct. 29-Nov. 1.

National Hotel Exposition, Coliseum, New York, Nov. 6-9.

National Pest Control Association, annual convention, Deauville Hotel, Miami Beach, Fla., Oct. 16-19.

New York Premium Show and Premium Advertising Conference, New York Coliseum, Sept. 25-28, 1961.

Packaging Institute, 23rd annual national packaging forum, Biltmore Hotel, New York, Oct. 18-20.

Packaging Machinery Manufacturers Institute, (PMMI) fourth annual show, Cobo Hall, Detroit, Nov. 7-10, 1961.

Society of Cosmetic Chemists, annual seminar, Barbizon Plaza Hotel, New York, Sept. 26-27; annual meeting, Biltmore Hotel, New York, Nov. 28; Chicago Chapter, monthly meetings, Henrici's Restaurant, Merchandise Mart, Sept. 12; Oct. 10, Nov. 14.

Synthetic Organic Chemical Manufacturers Association, monthly luncheon meetings, Roosevelt Hotel, New York, Sept. 12; Oct. 10; and Nov.14.

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tale ends

A NEW wrinkle in the battle of the all-purpose liquid cleaners P&G's "Mr. Clean" is about to encounter a new advertising adversary. This time it will be a woman who will be extolling the virtues of "Mr. C's" rival, "Lestoil." The woman? None other than Zsa Zsa Gabor. The outcome of this titanic struggle will be watched with bated breath. We will keep you posted, gentle reader, of the latest developments.

* * * * *

CSMA's second annual eastern golf tournament last month was full of oddities. Like the 1960 initiator of the series, this year's version also wound up in a tie in the low gross department. Tied for top honors, both with 75's, were M. Dennos of Schenectady Varnish Co., and Fred Lodes, Lodes Aerosol Consultants, Inc. Fred, who was chairman of the golf tournament, won when the tie was decided by matching cards.

* * * * *

They came from near and far to the CSMA golf tournament at Knollwood C. C., Elmsford, N. Y., June 27. George H. Flemming of Guardian Chemical & Equipment Co., Montreal; Jack Campbell of Continental Filling Corp., Danville, Ill., and a contingent from Chicago, were among close to 130 divot-diggers who showed up.

* * * * *

Al Marks of Wheaton Plastic-Cote Corp. bargained for a lot of laughs or a lot of headaches, depending upon your point of view, during the first week of July. Al was chairman of the big convention of magicians holding forth in Atlantic City, N. J. Some 450 sleight-of-hand people were to gather at the big New Jersey seaside resort to demonstrate the latest feats of this weird calling. In addition to selling all sorts of bottles, Al is quite a magician himsef.

* * * * *

Speaking of bottles, a Scottish firm last month introduced a new shampoo at the Scottish council's London trade display center. But this is no ordinary hair shampoo. The novel aspect of the product is that it contains 2% Scotch whisky. The combination also contains a dandruff remover, which also removes the product from the potable class. The brain-child of one John Armstrong-Payne, a kilt-wearing laddy whose firm also produces perfumes and bath essences, the shampoo is destined for the American market. Can you imagine all the embarrasssing situations you could stumble into with a head of freshly whisky-shampooed hair?

* * * * *

There's good news tonight in Long Island City, as Garbiel Heatter used to coo. And all over the change in the name of a street. Fleuroma, Inc., L. I. C. perfuming materials firm, has at last succeeded in having the name of the street on which it is located changed from Dreyer Avenue to 37th Avenue. Dreyer, of course, is the name of a competitive firm. Now, if Fleuroma could only succeed in having the billboard advertisement of another competitor removed from virtually its front yard!

* * * * *

Talk about compounding a felonly! As is our wont, we send out cards notifying "lucky recipients" that a news item of interest about them or their company has appeared in the pages of this august tome. In sending such a card to Al Weed, whose picture appeared on the front cover of the June issue as chairman of CSMA's Insecticide Division board, along with those of the other chairman, we misspelled his company name, as well as the name of his home town. It came out "O Machieson Chemical Corp., Ashvi , N. C." We also bestowed a middle initial, "A," on Al. He was good enough to return the card with the plaintive note, "For 35 years people have been trying to give me a middle initial—don't —there isn't any." Henceforth, on front covers or inside the magazine he shall be just plain Alfred Weed.

* * * * *

In enumerating the qualifications of a salesman—and a soap salesman at that—never once have authorities on selling and salesmanship mentioned one that strikes us as being important. At last we have found such a man. His name is Jim Grelle, a salesman on the west coast for the household products division of Colgate-Palmolive Co. Jim is a star track man. He defended his 1,500 meter title recently in the National A.A.U. track championships at Randalls Island in New York City. Jim set a meet record last year when he did the metric mile in 3:42.7 in pre-Olympic championship competition at Bakersfield, Calif. He went on to place eighth in the 1,500 meter race in the 1960 Olympic Games in Rome. A track star at the University of Ore- on, from which he was graduated in June, 1960, Jim is now running under t e colors of the Striders' Club of Los . geles.

* * * * *

In their search for new markets th perfuming materials people have from time to time come up with some dandies. We thilnk the latest "new application" is a dilly. Now, gentle reader, you may buy a perfumed necktie, already. One Countess Mara in N. Y. C. will supply you (for $8.50) with a tie that is perfumed to match the design. A cravat decorated with horse heads is scented with a saddle leather smell. Ties with fruit designs carry the odor of the fruit shown. Next thing you know they'll be making edible ties.

Norman Chadwick, vice-president, Avon roducts, Inc., New York, with newspaper columnist and author Amy Vanderbilt, famed etiquette authority. The locale is Chicago, where both attended the convention of the National Association of Direct Selling Companies, Mr. Chadwick is an officer of the association, and Miss Vanderbilt was a featured speaker th .